



Application Guide Print & Cut



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Dear Customer,

The Mutoh Ultima drag knife cutting plotter has been designed to be one of the most user-friendly and versatile cutting plotters in the market.

As a stand-alone cutting plotter, the Ultima can cut and plot designs onto vinyl and paper as required.

In combination with an inkjet printer, the Ultima cutting plotter is ready for contour-cutting of pre-printed signs made with any printer capable of printing onto cutting plotter compatible media. Contour-cutting is made possible via the integrated EPOS (electronic positioning) technology and the in-the-box software.

On the one hand Mutoh offers “**flagship**” solutions, in which the complete workflow is integrated in one software package: designing, ripping, printing, contour cutting and stand-alone cutting. These flagship solutions are the latest Mutoh editions of EasySIGN Power Pack Pro and Scanvec-Amiable PhotoPRINT DX.

On the other hand, Mutoh also offers a “**Workflow Integrity Solution**” that keeps an existing workflow largely intact but still introduces the flawless bar code option that behaves as a unique job ticket along the print & cut process and minimizes errors. The workflow integrity solution allows that the jobs are still designed, ripped and printed with the customer’s existing software packages. The sticker layout, bar code generation, cutting and contour cutting are in that case handled with the standard Ultima in-the-box EasySIGN Power Pack and the Mutoh CutServer.

In the following pages of this application guide the installation of the CutServer, the print and cut workflow and some hints and tricks are captured.

Please find the Ultima Installation CD as support for this manual in the box

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1. INSTALLING ULTIMA'S USB DRIVERS

Notes

- This manual is valid from Ultima Firmware 3.00 or higher and Mutoh CutServer version 1.18 or higher. Certain special functions (Multi-Frame Align AL5) are not supported by earlier versions.
- It is also possible that the align methods in EasySIGN have different names if your EasySIGN version is lower than 4.18

In case your computer already has an earlier USB driver installed, please uninstall it and reinstall the driver with the one on the Installation CD, enclosed in the box, to be sure you have the latest one.

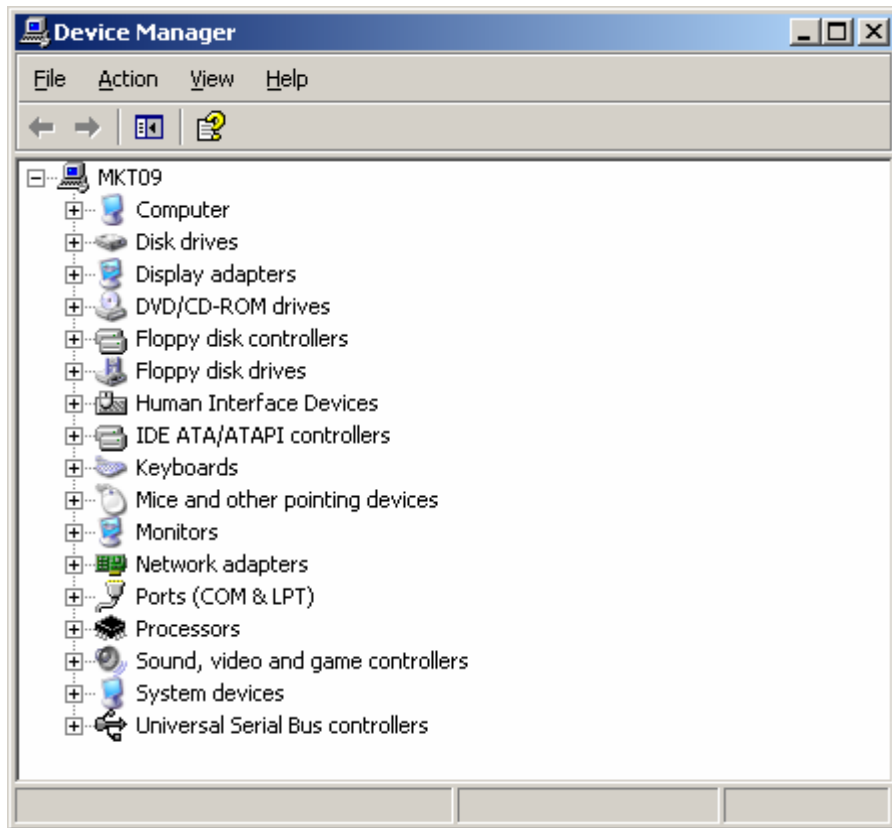
Step 1 : Browse to the folder "\\Ultima USB driver\USB FTDI drv Ultima Mutoh ID" on the installation CD.

Step 2 : Double click the Ftdiunin.exe file to run the uninstall procedure, follow on-screen instructions to complete uninstall.

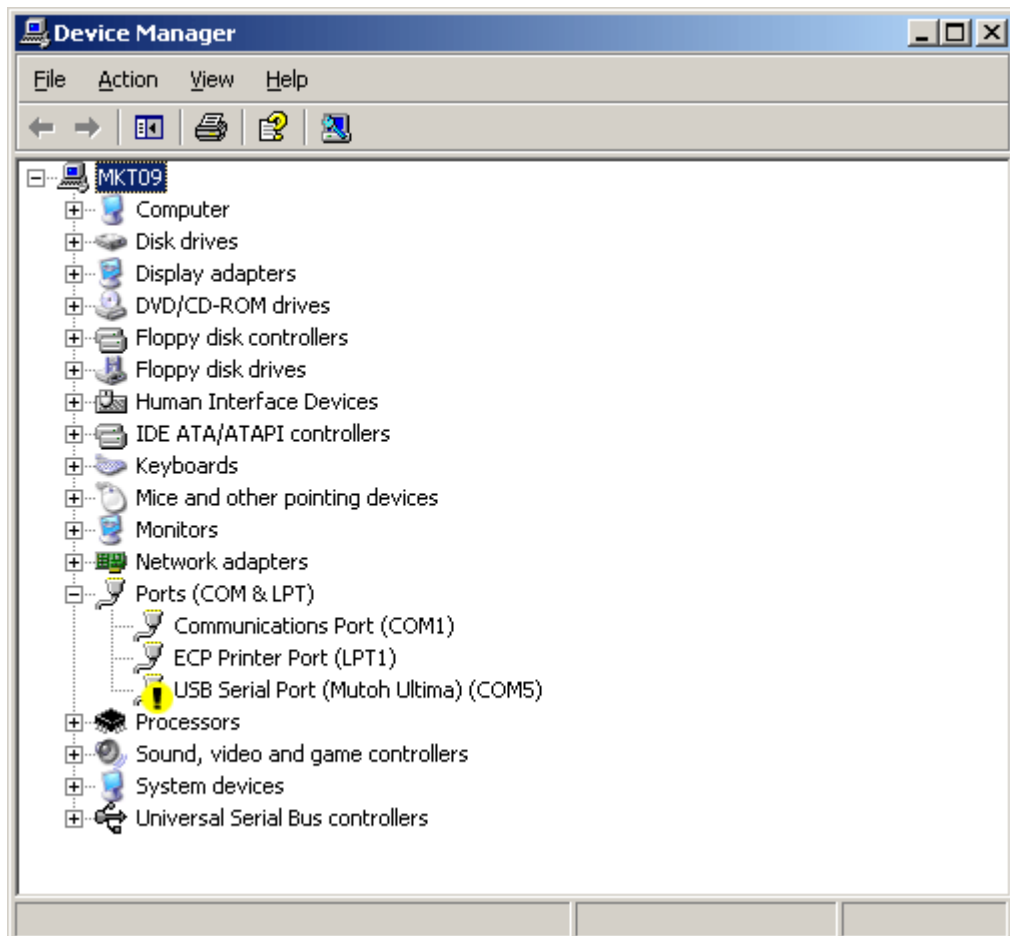


Step 3 : Re-boot PC, and connect the Ultima to the PC, it will start asking for drivers. BE CAREFULL: the windows installer remembers the old path of your previous drivers; make sure to browse to the "Ultima USB driver/USB FTDI drv Ultima Mutoh ID" folder on the Installation CD. Windows will ask you twice to install a driver (This is due to a technical reason. Our driver needs two files (ftdibus.sys and ftser2k.sys) for different purposes, and each file is considered to be a different driver.) Both drivers are located in the same path (\\Ultima USB driver/USB FTDI drv Ultima Mutoh ID)

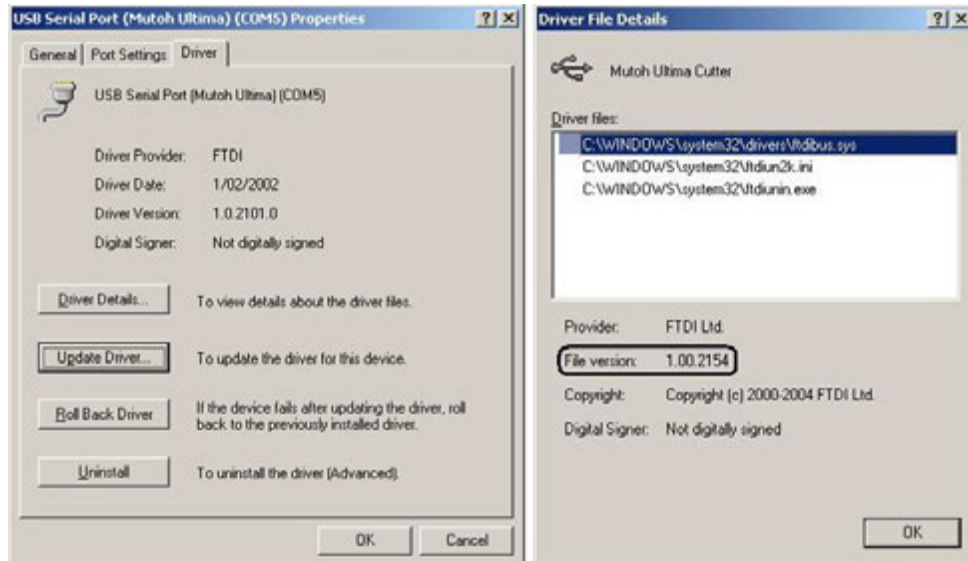
Step 4 : Check your control panel to see if your driver is correctly installed. Go to Control Panel, System, Hardware and click on Device Manager.



In case your Ultima driver has errors, you will see a yellow exclamation mark next to it.



In this case, double click the driver, go to the “Driver” TAB, and choose “Update Driver...”.
 (To check your latest revision click on driver details)



The update wizard will start. Choose “Install from a list or specific location”.



Again, for installation path, browse to the “Ultima USB driver/USB FTDI drv Ultima Mutoh ID” folder, and follow on screen instructions. The latest drivers can always be downloaded on our website (<http://www.mutoh.be/emc.asp?pageId=304> section USB Driver)

Step 5 : Your driver should now be correctly installed.

2. MUTOH'S CUTSERVER

2.1. INTRODUCTION

In order to use the Automated Barcode workflow, an exclusive CutServer tool has been developed by Mutoh to pass on all generated alignment plot files from your software to the Ultima plotter. All print and cut plot files will be gathered in the hot folder, linked to the CutServer Queue, in which the scanning command can be given to read the ID number of your printout. The CutServer is currently designed to work with windows XP and windows 2000 only, not MAC compatible. Latest CutServer version: 2.00 build 3
 The Mutoh CutServer requires following software driver versions to combine with:
 NCD – EasySIGN (SP4.18 or higher) and ErgoSoft – PosterPrint (Version 11.0.4.2219 or higher)



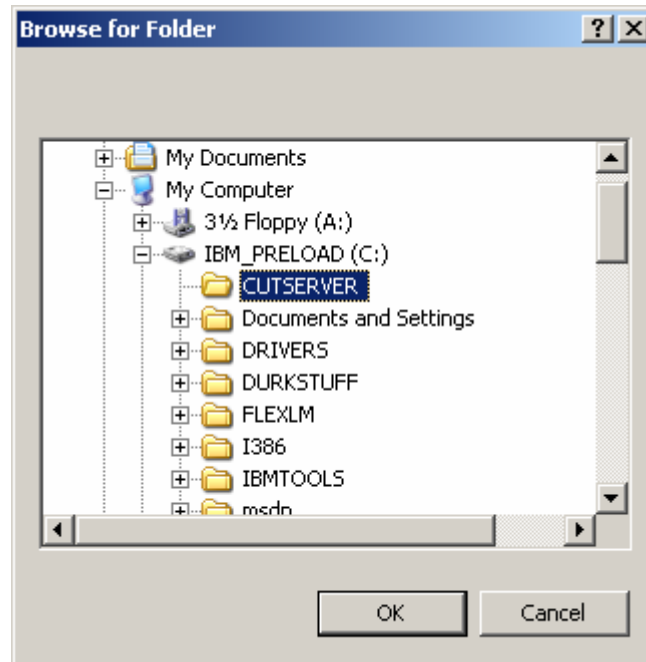
Notes

Rather than using the “GO!” CutServer button, an alternative bar code scanning sequence **directly** initiated **from panel** can be started as well. Press the Contour Cutting button on panel and select your appropriate alignment system. For more details, please refer to Chapter 4.

2.2. INSTALLING THE MUTOH CUTSERVER AND CONFIGURE EASYSIGN AND SCANVEC

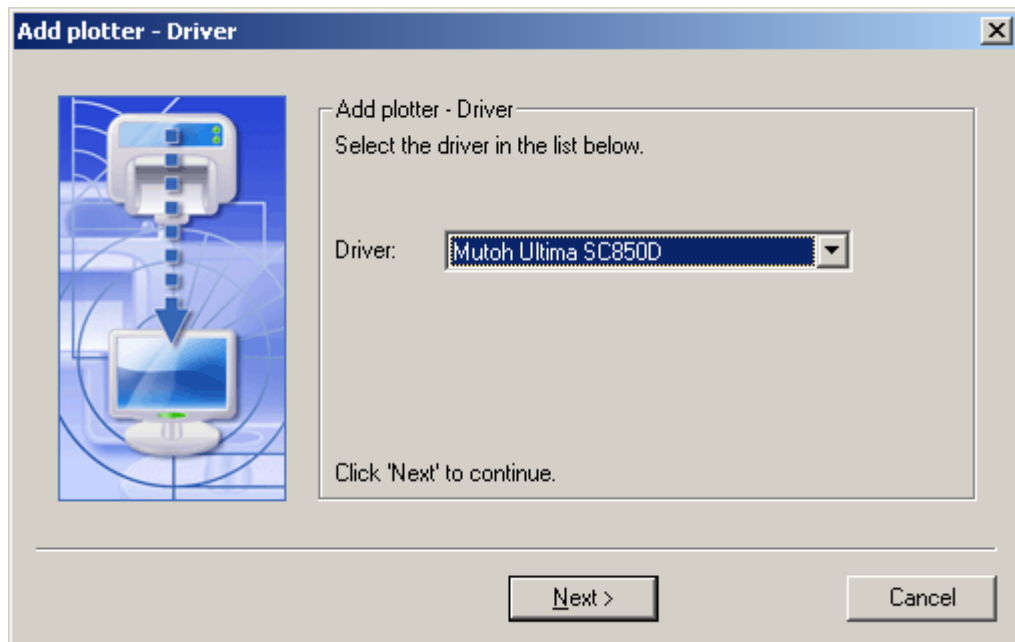
In order to use the Automated Barcode system, you need to combine EASYSIGN with the MUTOH CUTSERVER, read instructions below on how to install and configure this software.

- Step 1 :** On the Installation CD you will find a folder "CutServer_2_00"
In this folder, double click the SETUP.EXE and follow on screen instructions to complete the installation of the MUTOH CUTSERVER
- Step 2 :** Using your windows explorer, create a new empty folder on your HardDisk. (Any name will do, for the example we will call the folder CUTSERVER and place it directly under C:)
- Step 3 :** Start the Mutoh CutServer, go to FILE and choose SET DIRECTORY
Browse for the folder you just made with the explorer and click OK (see below)

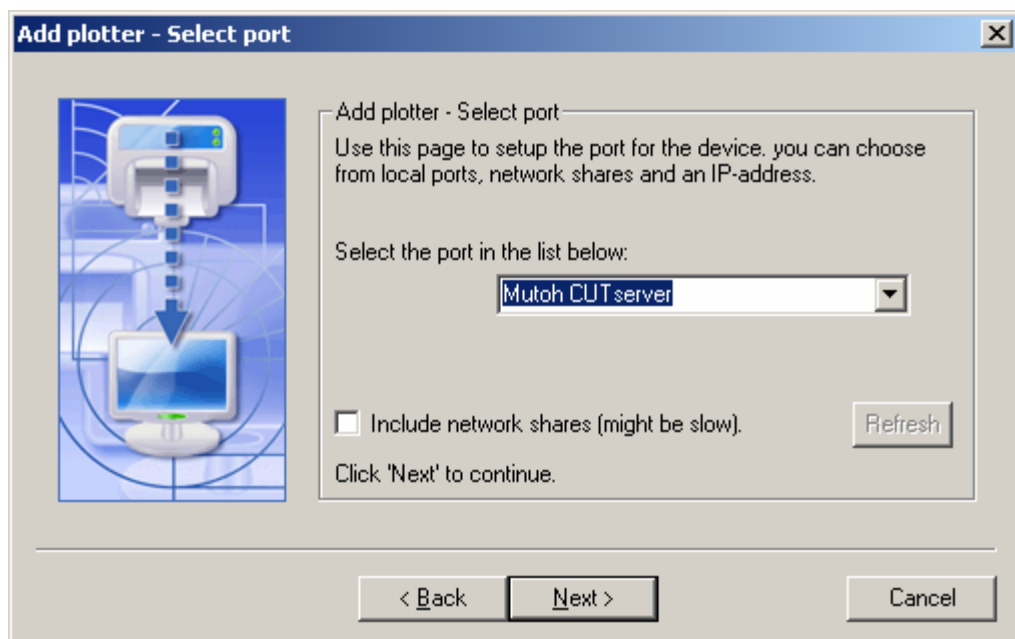


2.2.1. Configuring EasySIGN

Step 1 : Start EasySIGN (if already installed with correct service pack, refer to chapter 3.1.1) and go to FILE, DEVICE SETUP, ADD PLOTTER WIZARD



Step 2 : Choose Mutoh Ultima, click next and when the program asks for communication settings, choose MUTOH CUTSERVER

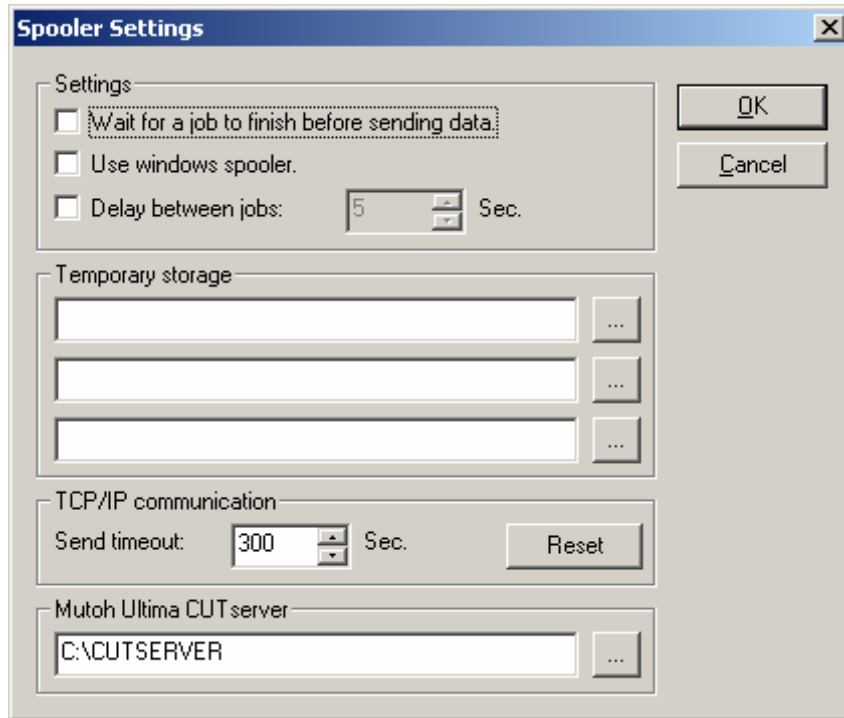


Step 3 : Click next, and finish the installation.

You are now ready to use EasySIGN to dump all plot files in the CUTSERVER folder and when you start your Ultima and the CutServer, just click on GO in the CutServer and all jobs will be cut automatically

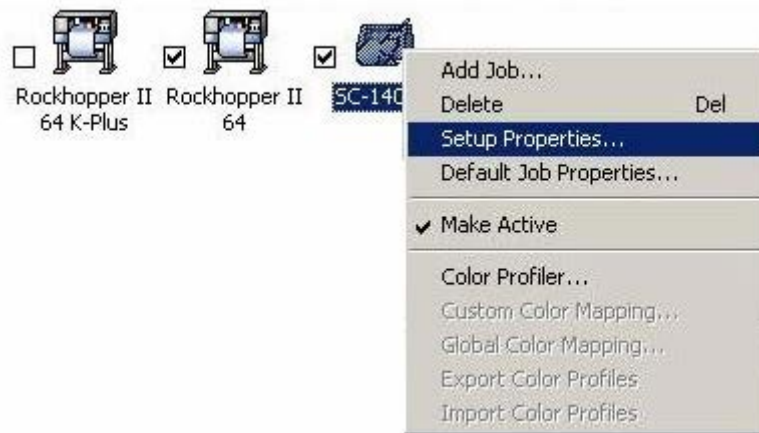
Note

EasySIGN should find the directory that is used by the CutServer automatically via the windows registry. In case this does not happen, you should start the production manager of EasySIGN, and go to SPOOLER, SETTINGS (see below). At the bottom, RETYP the exact path with drive letter and folder name as show below. (browsing for it does not work, it must be typed in the selection box)



2.2.2. Configuring Scanvec Amiable

Step 1 : Start Scanvec Amiable and press the right mouse button, setup properties.



Step 2 : Press on the second tab.



Port: "FILE:"

Setting: Select "Prompt for file path for each file"

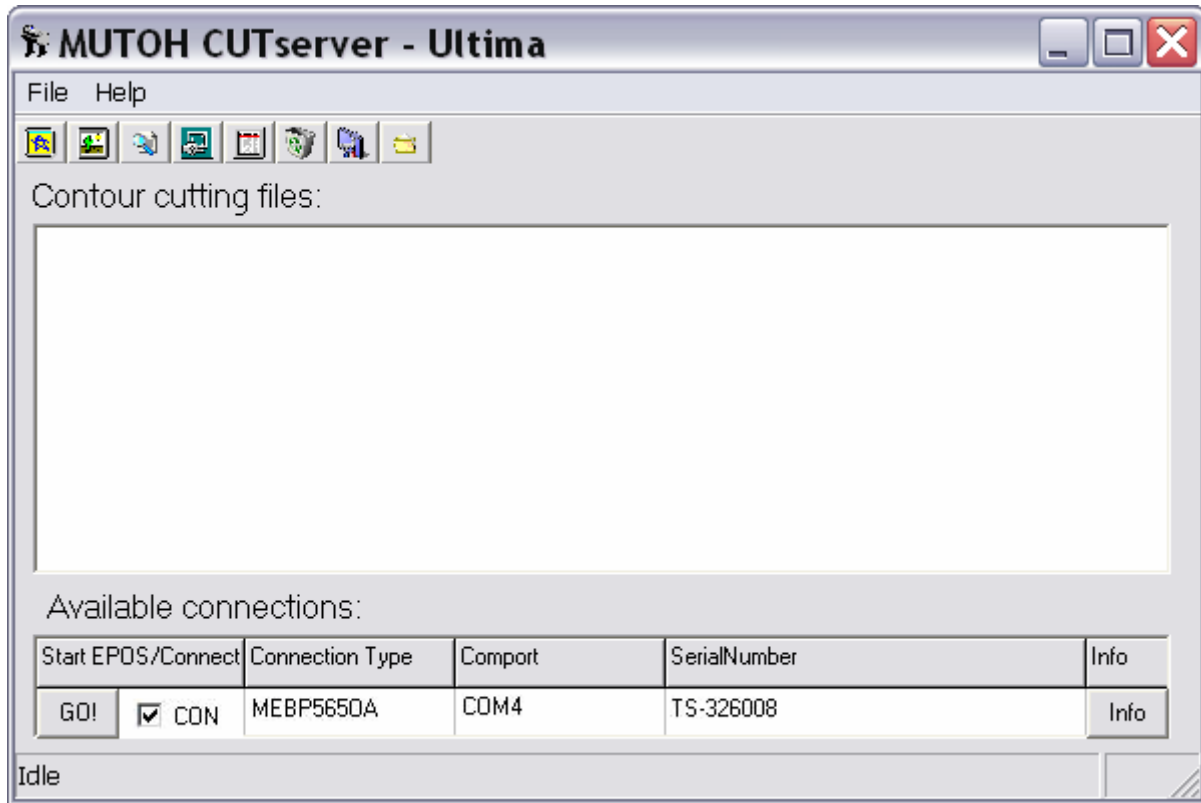
Default Location: Select the "Hot Folder"



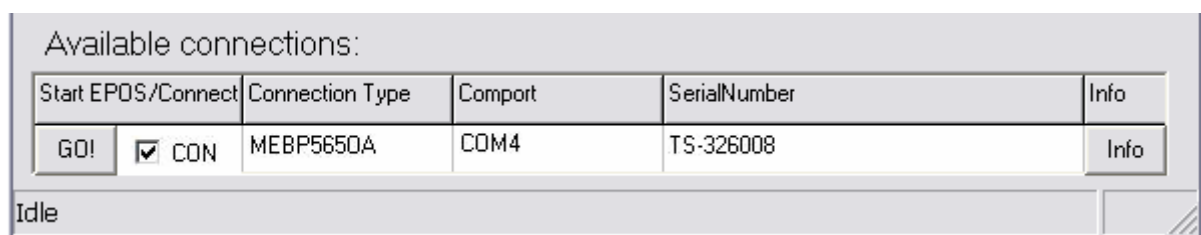
Step 3 : Press Apply and then OK

2.3. ALL DETAILS ABOUT MUTOH'S CUTSERVER

2.3.1. Main Window



2.3.2. Available connections



During initialisation of the CutServer, the start-up routine will search for all ACTIVE Ultima's on all available ports connected to your PC and CutServer. Immediately it will highlight each comport and serial number, according to your previous connectivity. In case no successful auto detection was found, tick the CON – box of the corresponding unit manually.

Example: TS-326008 on VIRTUAL com port 4

2.3.2.1. "GO!" Button

To identify your loaded contour job, pressing the "GO!" button will start a bar code scanning sequence. (This can also be done with the Ultima control panel, please refer to 4. Ultima Keyboard Features)

Notes

Be aware of the CutServer settings (EPOS mode, MULTI POINT mode) before launching the scanning command (please refer to 2.3.3.2. Settings).

Instead of using the "Go! Button" you can also start a bar code scanning sequence directly from the panel of the Ultima. Please refer to chapter 4.

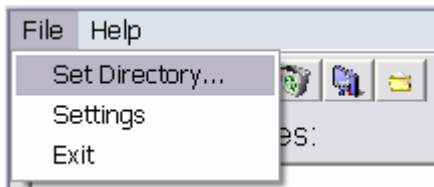
2.3.2.2. "Info" button

Supplementary, a list of machine information can be obtained

Machine Info	
MachineType:	SC1400
MachineLength:	1356mm
FirmwareVersion:	2.03
SerialNumber:	TS-326008
ProductionDate:	7/6/2004

2.3.3. Menu Structure

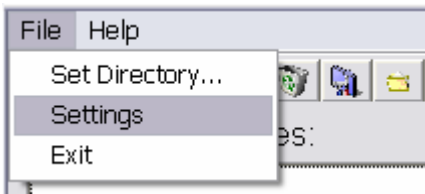
2.3.3.1. File > Set Directory



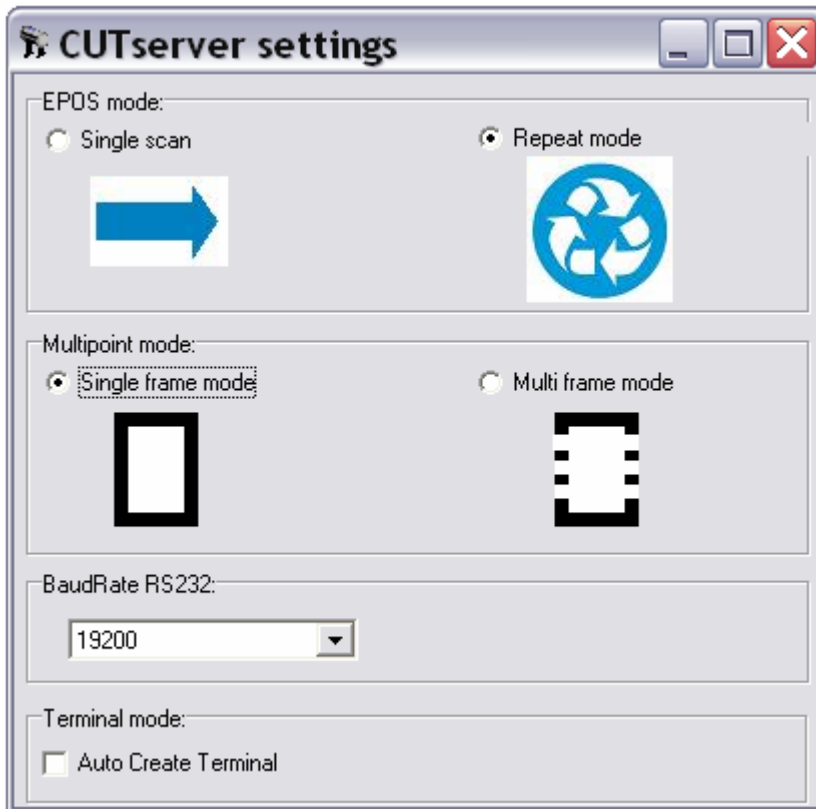
This menu option will give you the opportunity to browse and specify your hot folder. The hot folder is the folder in which all contour files or alignment files are gathered and which is continuously monitored by the CutServer.



2.3.3.2. File > Setting



Based on how these CutServer settings are set, a click on the “GO!” button will react accordingly.



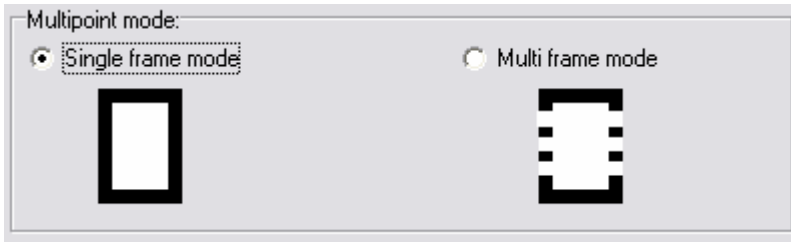
EPOS mode



> *Single Scan*: The command will be given to start scanning the bar code of the **first / next bounding box ONLY**, from roll or sheet. In case the ID number detected by the Ultima matches with one of the contour files present in the CutServer Queue, a corresponding alignment file will be selected and communicated towards the Ultima. After finishing this single job, the Ultima returns into the Ready status.

> *Repeat Mode*: AUTOMATICALLY all succeeding frames will be scanned and contour cut as well, until the end of roll is reached.

Multipoint mode



Multiple methods of aligning modes were developed by Mutoh in the past, each of them having different specifications, and different reasons for use. The MULTIPOINT mode interprets the type of alignment system and composes the correct scanning commands for each mode.

Two possibilities:

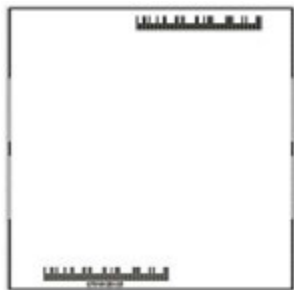
> Single frame mode: uninterrupted rectangle with postnet bar code



Corresponding alignment systems in compatible sign software (*):

NCD: Mutoh Auto Align (Bar Code)
ErgoSoft: Mutoh Ultima (Barcode)

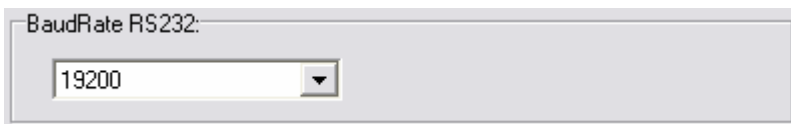
> Multi frame mode: segmented rectangle with postnet bar code



Corresponding alignment systems in compatible sign software (*):

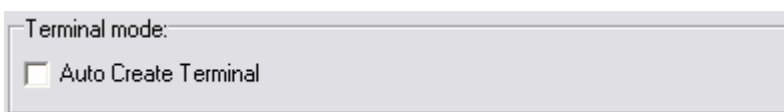
NCD: Mutoh Auto Align (Multiframe)
ErgoSoft: Mutoh Ultima (Barcode MF)
Scanvec Amiable: Mutoh Multiple Segment

BaudRate RS232



> 9600 or 19200

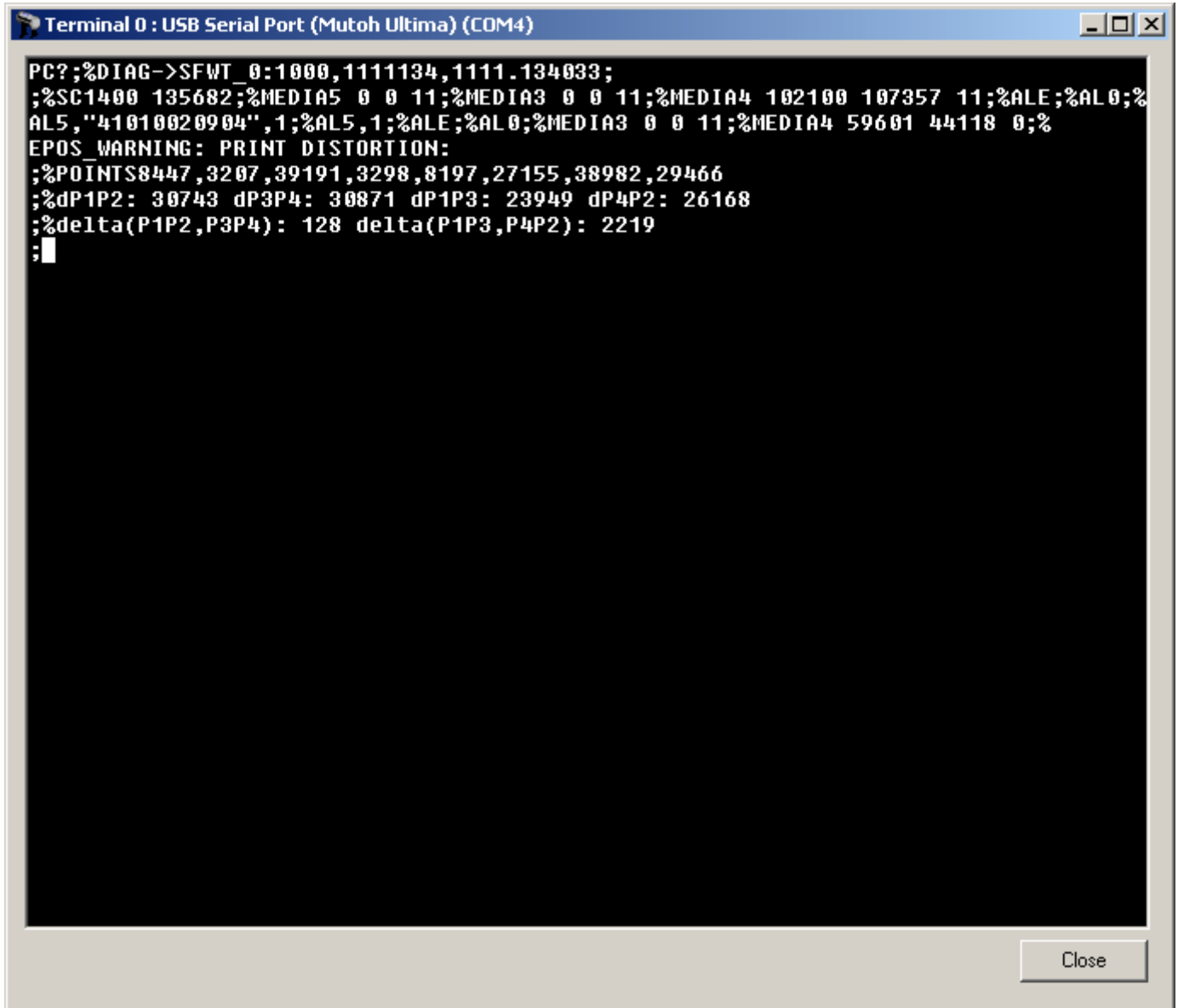
Terminal mode



(*) This list was published purely precautionary.. Please consult our website for the latest status - www.mutoh.be, Section Products - Cutters

> Auto Create Terminal

A DOS look-alike terminal window will allow you to get knowledge of certain command interactions (HPGL commands) between Ultima and CutServer. Every time a new port connection was made, a new corresponding terminal window will be created. Ticking the relevant checkmark box in the bottom section of the CutServer to activate / deactivate the plotter, will also open such a terminal, if set to ON. As an end-user, you will normally not need to set this option. It can be useful, however during installation or when a problem occurs, in order to test and / or debug communication issues between the plotter and the software.

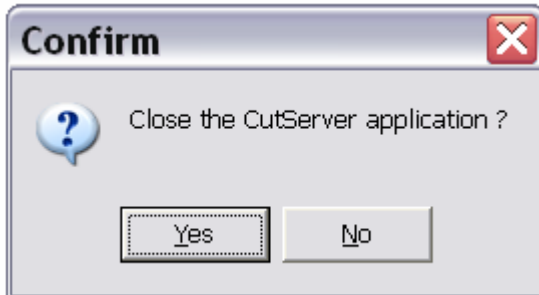


```
Terminal 0 : USB Serial Port (Mutoh Ultima) (COM4)
PC?;%DIAG->SFWT 0:1000,1111134,1111.134033;
;%SC1400 135682;%MEDIA5 0 0 11;%MEDIA3 0 0 11;%MEDIA4 102100 107357 11;%ALE;%AL0;%
AL5,\"41010020904\",1;%AL5,1;%ALE;%AL0;%MEDIA3 0 0 11;%MEDIA4 59601 44118 0;%
EPOS WARNING: PRINT DISTORTION:
;%POINTS8447,3207,39191,3298,8197,27155,38982,29466
;%dP1P2: 30743 dP3P4: 30871 dP1P3: 23949 dP4P2: 26168
;%delta(P1P2,P3P4): 128 delta(P1P3,P4P2): 2219
; █
Close
```

2.3.3.3. File > Exit



Closes the CutServer application



2.3.3.4. Help > About...



Mutoh CutServer version and build.



2.3.4. Toolbar Icons



2.3.4.1. Clip the File



Some software manufactures do not divide or clip the standard **multi frame** contour data into **separated segments**. In general, they will generate unsegmented contour data, carrying a NC label (**Not Clipped**) in its file name. The CutServer will then be responsible to convert the contour data into numerous segments.

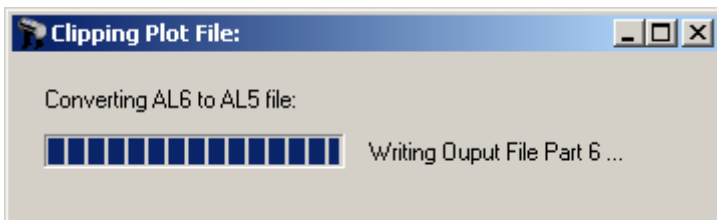
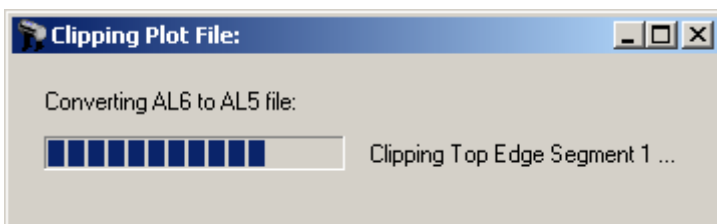
Two possibilities:

[A] A full automatic approach – DEFAULT – RECOMMENDED

The CutServer build offers the user the ability to fully convert the clipping of the unsegmented contour data (NC file) ON THE FLY, without any user intervention. Only one condition should be suffered from: the presence of the NC file in the CutServer Queue.

- Step 1 :** NC file in CutServer Queue?
- Step 2 :** Check your CutServer settings for the appropriate multipoint mode (multi frame)
- Step 3 :** Press GO! --> bar code scanning --> CutServer receives the ID number detected by the Ultima
- Step 4 :** Searches for the proper bar code ID, and notifies a non-clipped ID number
- Step 5 :** Automatically, the NC --> MF conversion will take place and the CutServer will only respond with the clipped MF file

Input: Filename_NC_41010220205.plt



Output: Filename_MF_41010220205.plt



[B] A manual approach – Click the *Clip the file* toolbar icon

- Step 1 :** Search and select the appropriate ID file (NC label) in the Mutoh CutServer Queue.
- Step 2 :** Press the *Clip the file* toolbar icon.
- Step 3 :** Converting busy.
- Step 4 :** The end of the CutServer clipping will result in a similar filename with MF extension.
- Step 5 :** Check your CutServer settings for the appropriate multipoint mode (multi frame).
- Step 6 :** Press GO! --> Bar code scanning --> CutServer receives the ID number.
- Step 7 :** CutServer selects the MF extension and replies with the segmented plot file.
- Step 8 :** Segment plotting on Ultima.

Notes

Software Manufacture	Software bundle	Clipping method	
		NC compatible (*)	MF compatible (*)
NCD	EasySIGN	NO	YES
Scanvec Amiable	PhotoPRINT SE or DX Mutoh Edition	NO	YES
Onyx	RipCenter	Not implemented	Not implemented
ErgoSoft	PosterPrint	YES	NO

(*) NC: Not Clipped

(*) MF: Multi Frame

**As you can see, there is no need to clip a NCD plot file!
Therefore in the NCD configuration, the *Clip the file* toolbar icon should NEVER be used!**

2.3.4.2. View / Clip the selected file



Identical like previous clip icon, however a **graphical interface** will represent both NC and MF files. For a large amount of data, it is not recommended to use this time consuming viewing method.



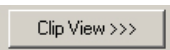
Uses proportional window scaling



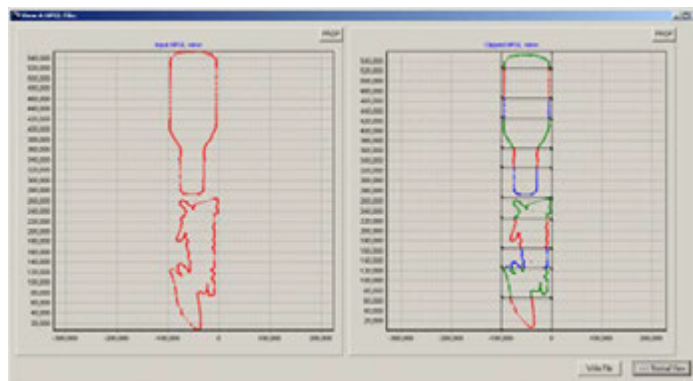
Proportional OFF



Proportional ON



Views your clipping result – extend your window



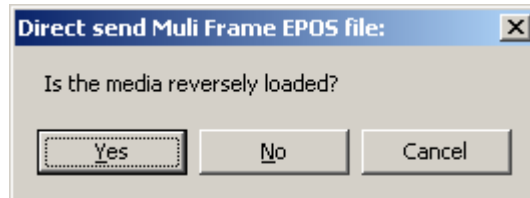
> Left: Input HPGL view > Right: Clipped HPGL view

Each colour represents a clipped segment of the entire contour alignment file – type multi frame mode.

2.3.4.4. Send EPOS Job



In case **reading errors** occur during the Ultima's bar code detection sequence, a **manual workaround** for damaged bar code strings or faulty readings is available. Search for the correct alignment file in Mutoh's CutServer Queue, and press the *Send Epos Job* button. To directly send the EPOS file without reading the bar code, the media load direction needs to be provided (0° or 180° degrees rotated?).

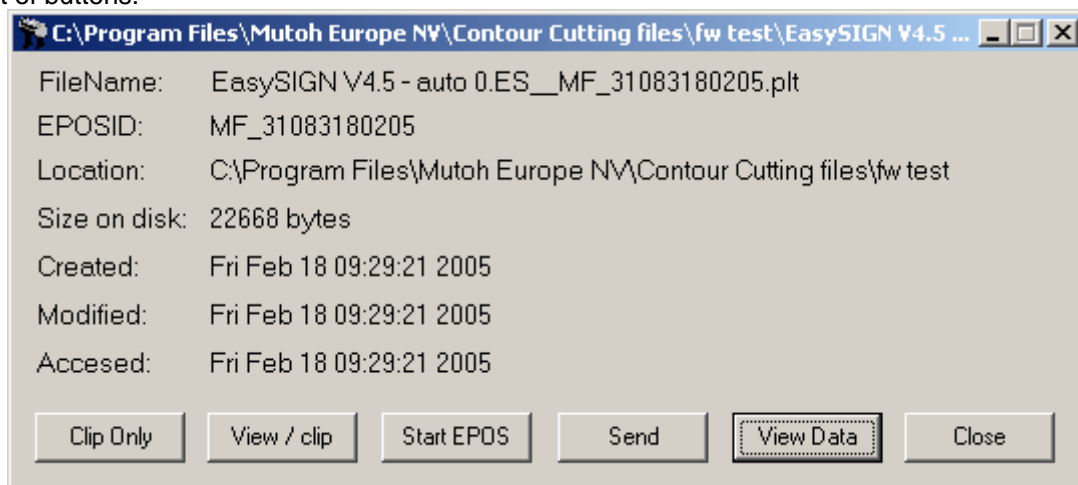


As soon as a confirmation is given, the frame scanning command will be adapted to bypass the bar code reading, and immediately the registration marks of the bounding box and the vector data will be broadcasted.

2.3.4.5. View File Info



In order to get know-how of certain file properties, additional information can be obtained by double clicking each contour cutting file listed in the CutServer Queue. Furthermore, rather than using the quick shortcut icons from the toolbar, a number of relevant file functionalities were reproduced once more by means of an extra set of buttons.



Clip Only:

The CutServer build offers the user in certain occasions the ability to fully convert the clipping of an unsegmented contour file (NC label) into numerous segments.

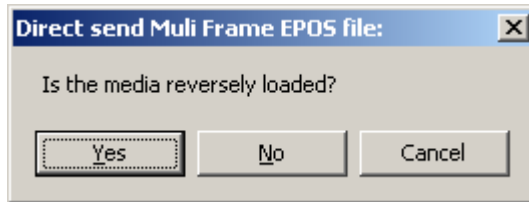
Condition >> INPUT: filename_**NC**_JobID.plt
For further info >> section *Clip the file icon*

View / Clip:

Identical like previous Clip Only button, however a **graphical interface** will represent both NC and MF files. Do not forget to write the MF file manually via the *Write File* button! For a large amount of data (check Size on disk property), it is not recommended to use this time consuming viewing method.

Start EPOS:

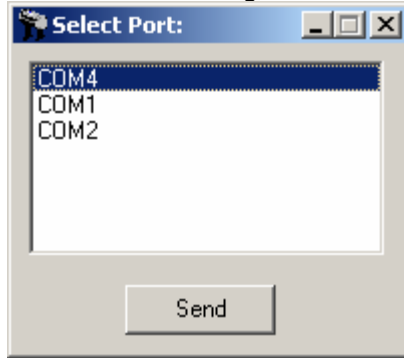
In case **reading errors** occur to **automatically** spot your bar code ID, a **manual workaround** for damaged bar code strings or faulty readings was made. Press this *Start EPOS* button to directly send the EPOS file without reading the bar code. Make sure the media load direction matches your choice (0° or 180° degrees rotated?)!



As soon as a confirmation is given, the frame scanning command will be adapted to bypass the bar code reading, and immediately the registration marks of the bounding box and the vector data will be broadcasted.

Send:

Sends out the cutting file, but asks first to which 'open' communication port.



View Data:

To view the HPGL plot data, the file contents can be displayed (no editing possible).

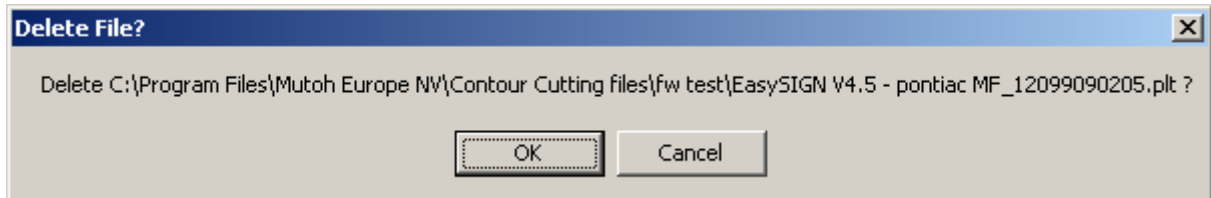
Close:

Closes the file info window

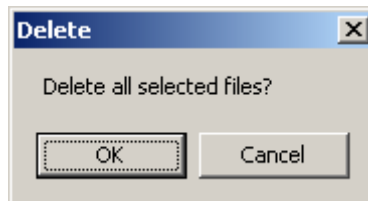
2.3.4.6. Delete File



The recycle bin icon will remove the selected file from the CutServer Queue and its hot folder!



Also, a number of files (Ctrl / Shift – key) can be cleared at once as well.



2.3.4.7. CutServer settings

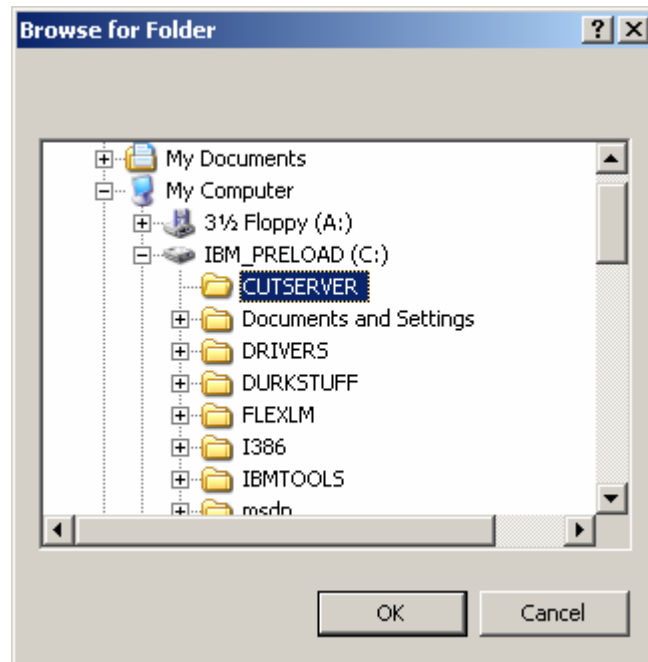


>> Based on how these CutServer settings are all set, a click on the “GO!” button will react accordingly.

2.3.4.8. Set CutServer Directory



This toolbar icon will give you the opportunity to browse and specify your hot folder. The hot folder is the folder in which all contour files or alignment files are gathered and which is continuously monitored by the CutServer.



3. SETTING UP YOUR PRINT AND CUTSOFTWARE

3.1. NCD - EASYSIGN

3.1.1. Update EasySIGN

On the installation CD you will find a folder "EasySIGN Update". This folder contains the latest EasySIGN Service Pack. This service pack will update your EasySIGN to the latest version, which is necessary to be able to generate a barcode.

Just install EasySIGN, and after rebooting your PC, double click the EasySIGNServicePackV4.exe file that you find in the "EasySIGN Update" folder.

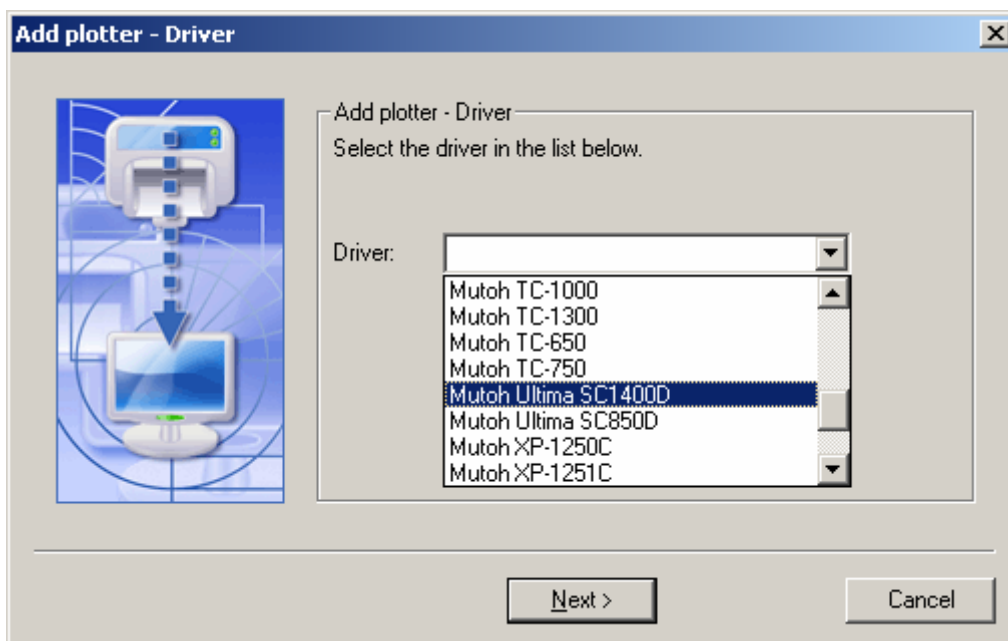
Follow on-screen instructions to complete installation.

3.1.2. EasySIGN driver installation

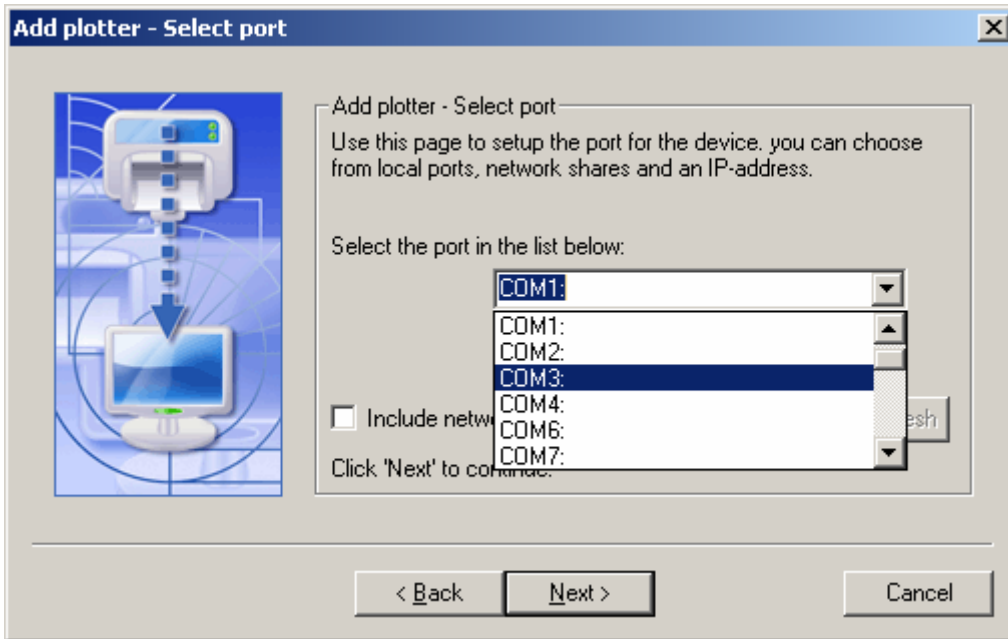
When installing the Mutoh Ultima cutters, you might need to install the driver twice. Once via the CutServer (to be used with the auto-align barcode workflow) and once via the virtual com port (created by the Ultima USB driver, see under point 1) for normal sign cutting jobs.

Step 1 : Start EasySIGN (start, programs, EasySIGN)

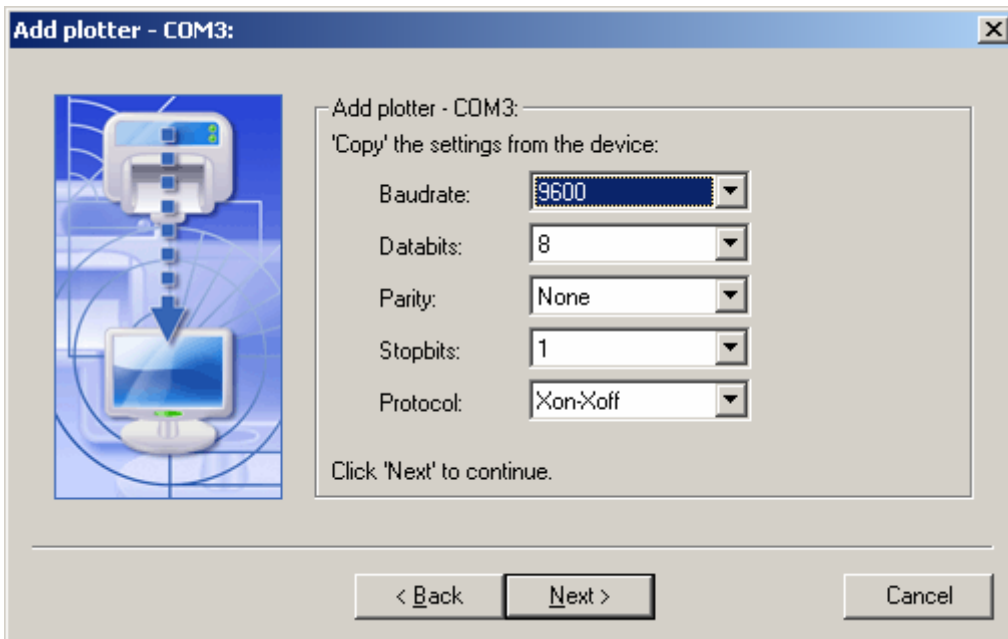
Step 2 : Go to FILE, DEVICE SETUP and click on the 'Add Plotter' Wizard. The add plotter window should appear (see below)



Step 3 : Choose Mutoh Ultima ScxxxxD and click on NEXT, the Select Port window should appear. Choose the virtual com port (in this case, COM3) and click on next.

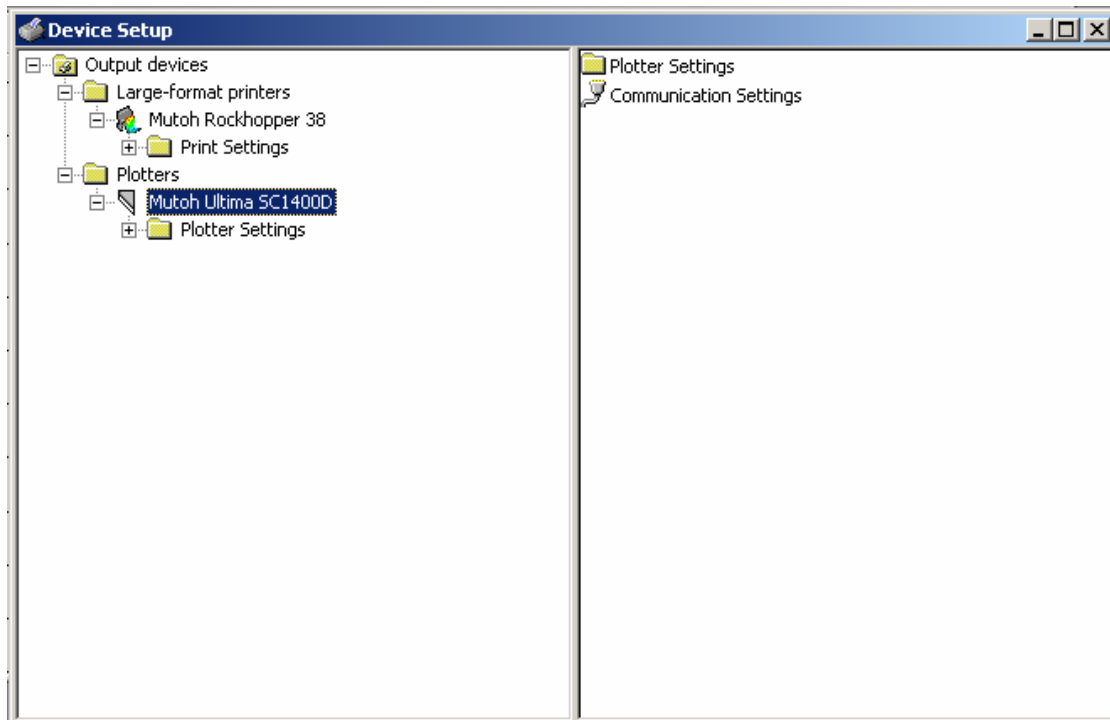


Step 4 : The port settings window appears, leave it on windows defaults, and click on next (see below)

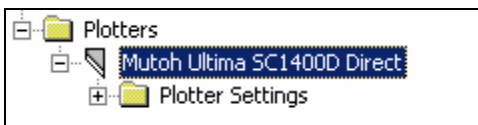


Step 5 : Click FINISH. The driver is now installed

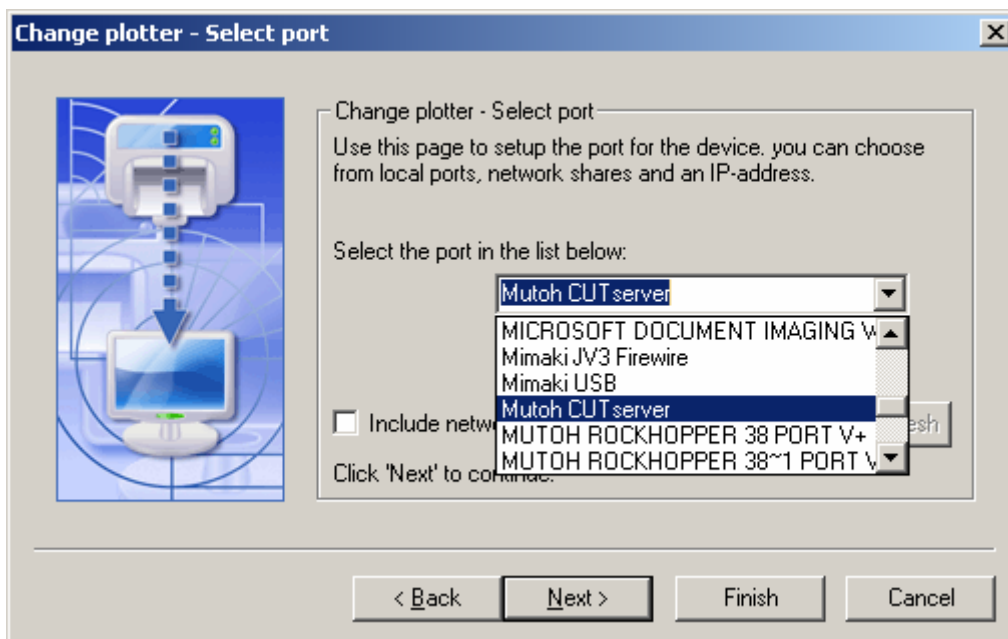
Step 6 : In EasySIGN, go to FILE, DEVICE SETUP and click on OPEN. Device manager will start. Right-click the Ultima Driver and Choose RENAME



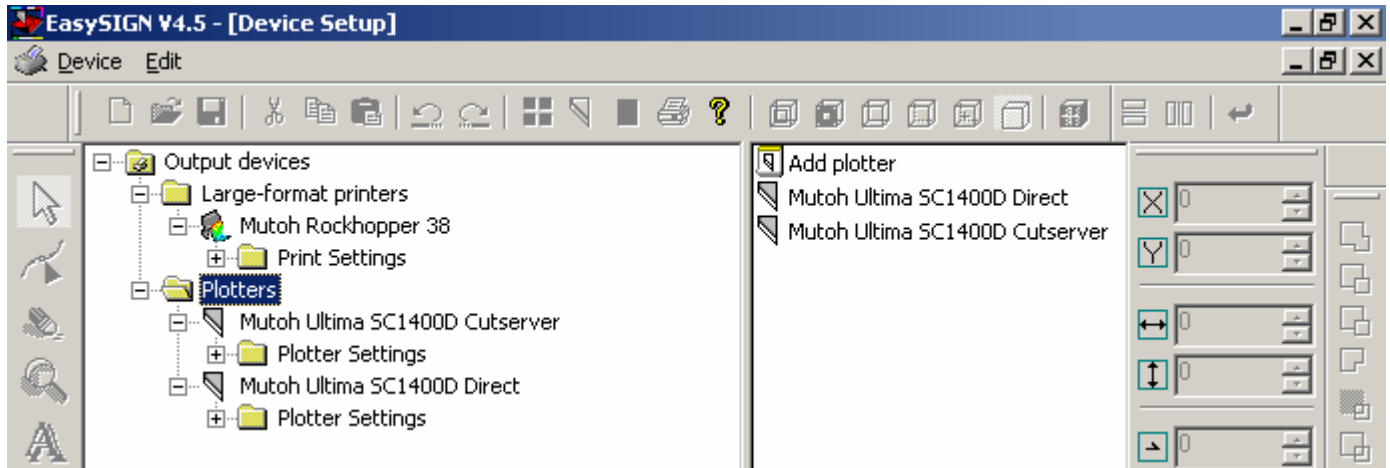
Name it (for example) **Mutoh Ultima SC1400D Direct**



Step 7 : Now close the Device Manager, and start again from **Step 1**, until you need to specify the port (**Step 3**) and this time choose Mutoh CutServer.



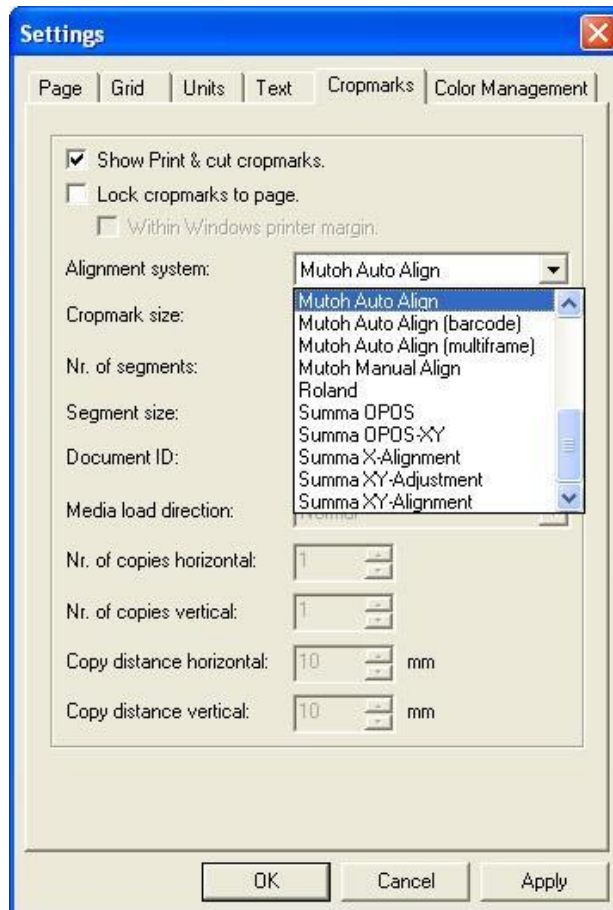
- Step 8 :** Click NEXT, FINISH and your second driver should now also be correctly installed. Rename it to **Mutoh Ultima SC1400D CutServer** (procedure see above, starting from **Step 6**)
- Step 9 :** If you walked trough every step, you should now see two Ultima drivers in the DEVICE MANAGER. One as direct cutter and one via the Mutoh CutServer. Use the Direct Ultima for normal cutting jobs, and use the CutServer for Auto-aligning with barcode



3.1.3. Different Alignment Methods

The EasySIGN Ultima drivers offers 4 different methods of aligning, each of them having different specifications, and different reasons for use.

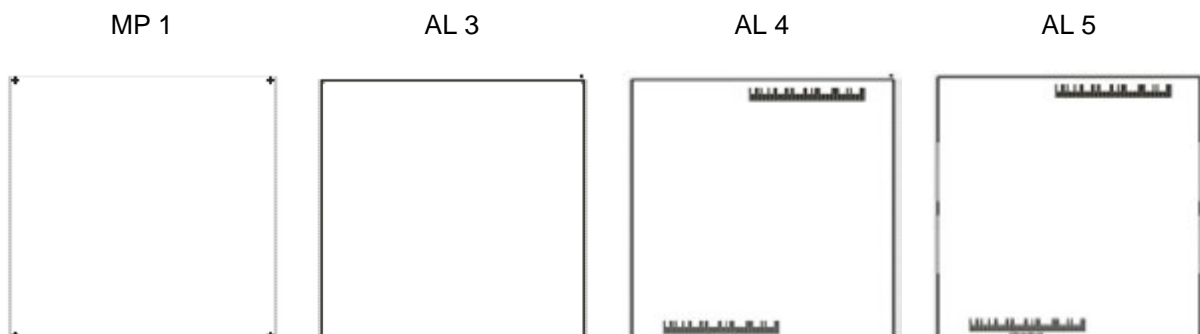
Right-click in EasySIGN and choose CROPMARK SETTINGS. When you check the drop-down list, it looks like below.



Four Methods are specially designed for Ultima:

- 1) Mutoh Manual Align (MP1 method)
- 2) Mutoh Auto Align (AL3 method)
- 3) Mutoh Auto Align (Barcode) (AL4 method)
- 4) Mutoh Auto Align (Multiframe) (AL5 method)

Each one of these methods has its own cropmark system (see below)



The MP1 (Mutoh Manual Align Method) is the non-automatic method.

Its advantage is that the cropmark system is very small (for small sized jobs), and that this method can be used in case of vinyl that do not reflect the laser light (meaning, the laser would not be capable of measuring the cropmarks automatically).

The user has to use the jog keys on the Ultima's keyboard to measure each cross manually before contourcutting can start.

The AL3 (Mutoh Auto Align) is the first fully-automated alignment system.

Just place the sign in the cutter, click on PLOT in the cutting software, and the cutter will automatic align the sign by use of the black bounding box, no user intervention is needed.

This method is ideal for use of single signs, one at the time.

We do not advise to use this method for signs over 2 meter of length, although there is no real limit to the length that can be used.

The AL4 (Mutoh Auto Align Barcode) is similar to the AL3 method, but there is barcode printed on the sign.

YOU MUST USE THIS METHOD IN COMBINATION WITH THE CUTSERVER!!!

This method can be used in case you are creating multiple different contour signs. It allows you to make all your prints at once (overnight printing for example), and then load the roll with images in the Ultima.

If each sign on the roll has a barcode and if all plot files are in the CutServer, just click on GO in the CutServer (make sure that the CutServer properties are set to SINGLE FRAME, and REPEAT MODE) and every sign on the roll will be cut, without the need for user intervention (make sure you've enabled auto-sheet-off in EasySIGN for each contour-sign)

The reason for the two barcodes is to make it possible for the Ultima to auto-detect if the image is loaded upside-down or correctly.

There is no need for you to search the plot file for each image, the Ultima and the CutServer will do this fully-automatically, until the complete roll with signs is finished.

We do not recommend this method over 2 m job length, although there is no real limit to the length that can be used.

The AL5 (Mutoh Auto Align Multiframe) offers all advantages of the AL4 and AL3 method, but it will split the image in multiple segments of maximum 50cm. (This is to enhance precision over long length).

With AL5, it is possible to make signs of 10m or longer, and the Ultima will measure segment per segment, and cut segment per segment. This method gives you more accuracy than the AL4 method. We do not recommend this method for signs smaller than 1,5m

You should use the CutServer for this method, and make sure that the CutServer properties are set to MULTIFRAME MODE. (Single scan for 1 AL5 file and Repeat mode for a roll with multiple AL5 files)

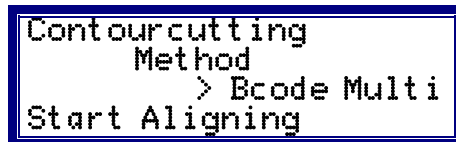
Notes

When using REPEAT MODE in the CutServer, it is NOT possible to combine different align methods (Single solid frames (type AL4), Segmented frames (type AL5, AL6) on the same roll!!!)

4. ULTIMA KEYBOARD FEATURES

When you prepared several jobs with barcode, and all jobs are in the CutServer queued, ready for cutting, you can either click the GO button in the CutServer, or you can launch the files remotely from the Ultima Keyboard (if the CutServer is running of course)

On the Ultima Keyboard, Press **CONTOUR CUTTING**. The following menu should appear



4 methods are possible for aligning:

- | | |
|-----------------|--|
| 1) Bcode Multi | Automatic align Barcode Multi -segment (AL5 or AL6) |
| 2) Bcode Single | Automatic align Barcode Single frame (AL4) |
| 3) Manual | Manual align (MP1) |
| 4) Auto No Bcod | Automatic aligning, no barcode (AL3) |

Select the Method used by your software (usually AL4 or AL5) and in case you use options **1) or 2)**, press the **CONTOUR CUTTING** button again to select

- | | |
|-----------------------|--|
| 1) Single Scan | (one sign only) |
| 2) Repeat Mode | (complete roll of scans, all with barcode) |

Press the Enter key to start the align job. The Ultima will automatically start searching for a barcode, and if found, it returns the number of the barcode to the CutServer. The CutServer will search for a file with that number in its name, and if found, it will automatically send this file to the Ultima.

The Ultima will automatically start aligning once it received the file, and once the aligning is finished, it will start cutting the job.

Notes

- Make sure your software supports the single and multi frame align method.
- Make sure you set the Mutoh CutServer to the correct method before you start contourcutting. Start the Mutoh CutServer, go to Settings, and choose Multipoint Mode. Set to Single Frame Mode for AL4 commands, or set to Multiframe Mode for AL5 or AL6 commands.

5. COMPLETE PRINT AND CUT WORKFLOW

5.1. INTRODUCTION

With the new FULL AUTOMATIC Epos contour cut workflow we introduce the self-correcting capabilities of the Ultima. The new method performs 4-point automatic aligning with self-correcting contour cutting for roll media by scanning the bar code posted inside the frame via the laser IR led and then communicates with the Mutoh CutServer.

5.2. AL COMMANDS AND HISTORY

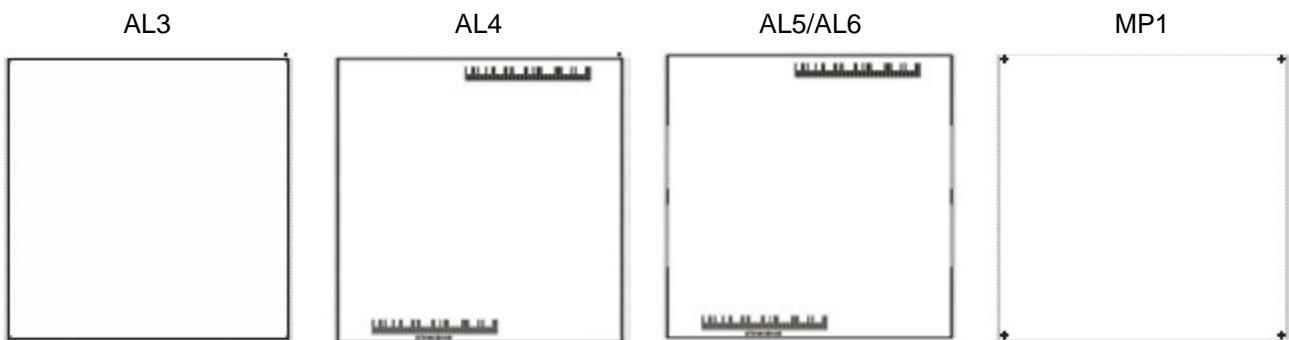
- **AL1 command** (NCD SW → Mutoh Auto Align)
 - 3 point Alignment system
 - re-calculation of contour data done by Software
 - Only Sheet support
- **AL2 command** (NCD SW --> Mutoh Auto Align, Multiple)
 - 4 point Alignment system
 - re-calculation of contour data done by Software
 - Roll support
- **AL3 command** (NCD SW --> Mutoh Auto Align, AL3)
 - 4 point Alignment system
 - Re-calculation of contour data done embedded by firmware
 - Reverse Roll support
 - Frame replot via panel
 - AL - workaround via Contour cutting button
- **AL3 command with new 4 points EPOS Transformation matrix**
- **AL4 command**
 - AL3 command + Barcode scanning

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- **AL5 command** (for long sticker contour cutting purposes)
 - AL4 command + SEGMENT CLIPPING done in SW driver
- **AL6 command** (for long sticker contour cutting purposes)
 - AL4 command + SEGMENT CLIPPING done in Mutoh CutServer

5.3. AUTOMATIC ALIGNMENT SYSTEMS – SOFTWARE DRIVER SUPPORT

	AL3	AL4	AL5	AL6	MP1
NCD	✓	✓	✓		✓
Onyx Graphics	✓				✓
Scanvec Amiable	✓	✓	✓		
Ergosoft	✓	✓		✓	
Mutoh Cutserver		✓	✓	✓	



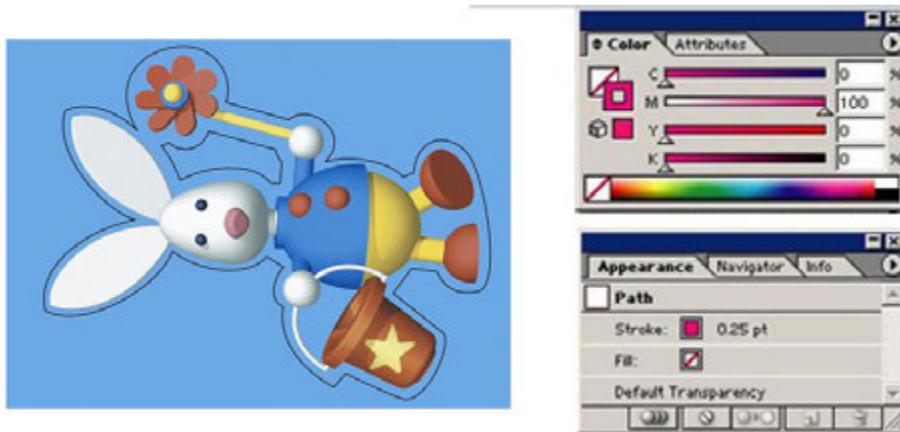
Choose your Alignment system

- **MP1 command** – manual align method
 - Non-white vinyl + small format sheets (safeguard margins)
 - 4 registration marks rather small
- **AL3 command** – automatic align method, no Bar Code
 - Single frame signs
 - Frame lengths < 1.5 m – 2.0 m
- **AL4 command** - automatic align method, Bar Code (Use Mutoh CutServer)
 - Multiple and dissimilar print and cut tasks from roll
 - Frame lengths < 1.5 m – 2.0 m
- **AL5/AL6 command** - automatic align method, Bar Code (Use Mutoh CutServer)
 - For long sticker contour cutting purposes only
 - Segment clipping of plot data

5.4. PRINT AND CUT WITH NCD – EASYSIGN

Please follow the steps below to perform a print and cut workflow with NCD EasySIGN.

Step 1 : Create your contour design with hairline identification.

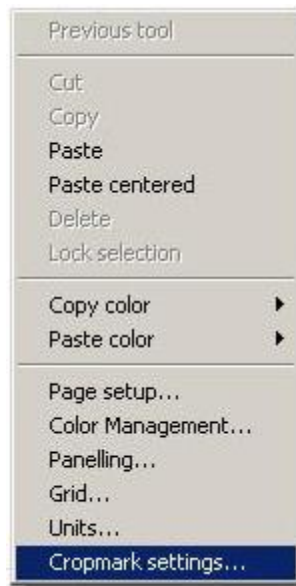


Step 2 : Set your **import** settings in EasySIGN.



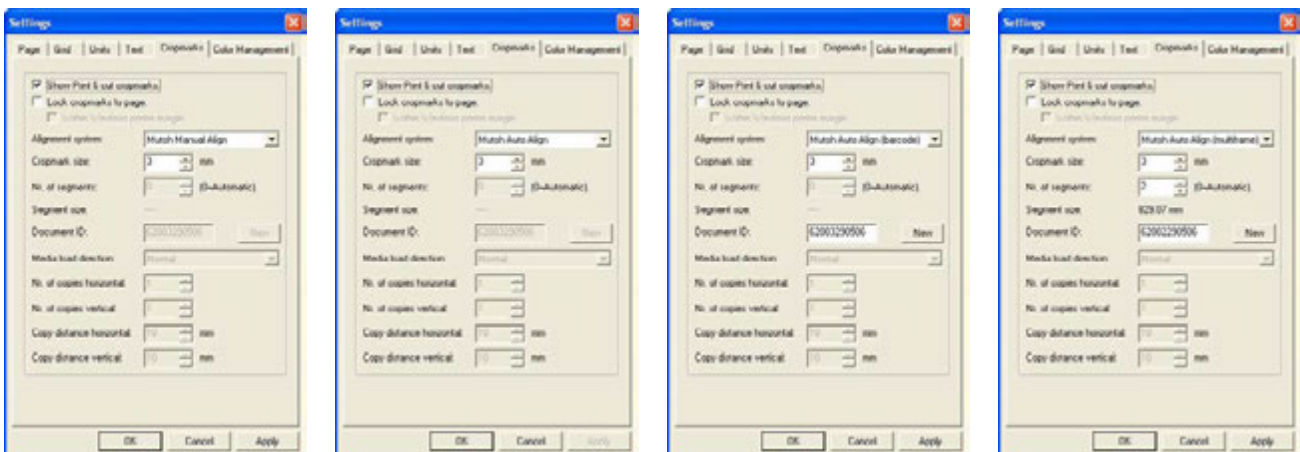
Step 3 : Import your designs

Step 4 : Enable **cropmark settings** in the menu which comes on the screen when pushing the right mouse button.



Step 5 : Select appropriate alignment system

- a. Mutoh Manual Align = MP1
- b. Mutoh Auto Align = AL3
- c. Mutoh Auto Align (barcode) = AL4
- d. Mutoh Auto Align (Multiframe) = AL5

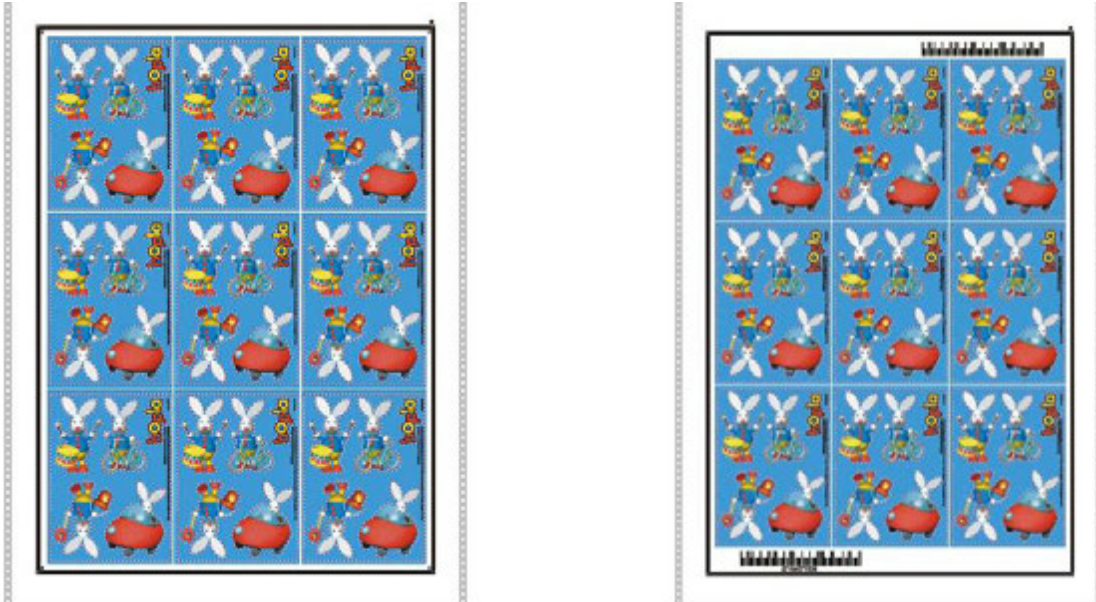


Step 6 : Do you have EasySIGN Power Pack Pro?

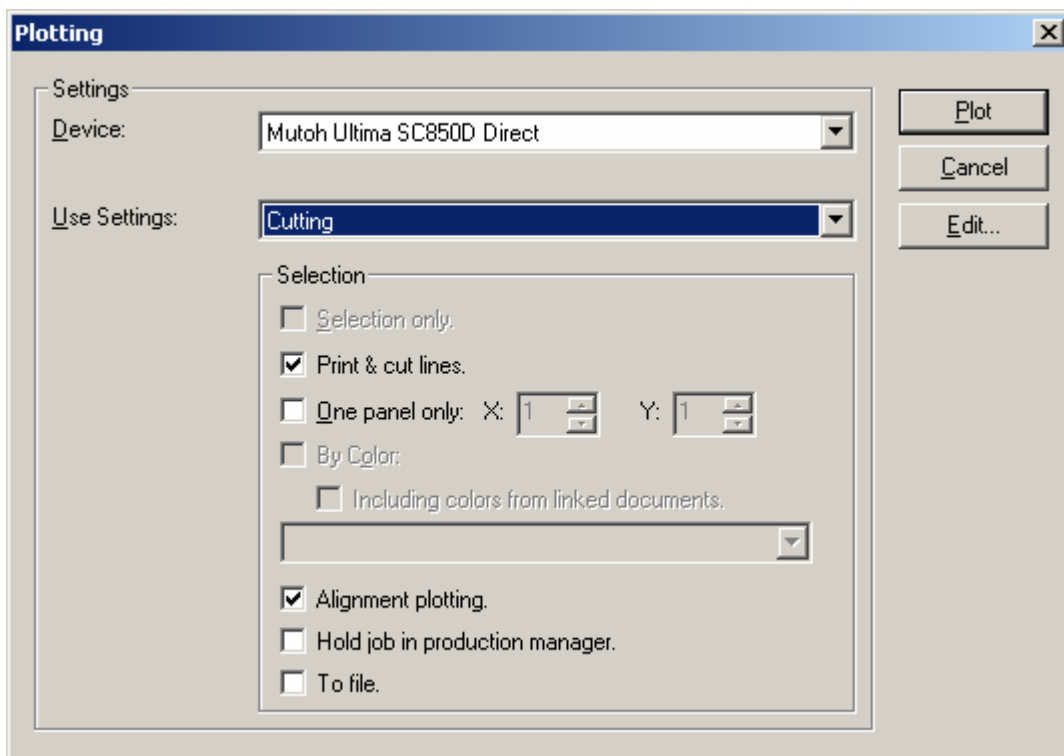
- a. Yes >> Print via EasySIGN
- b. No >> Export and import into your rip bundle

Step 7 : Do you want a barcode?

- a. No >> [A] Direct plotting (AL3, MP1)
- b. Yes >> [B] Plot file via Mutoh CutServer (AL4, AL5)

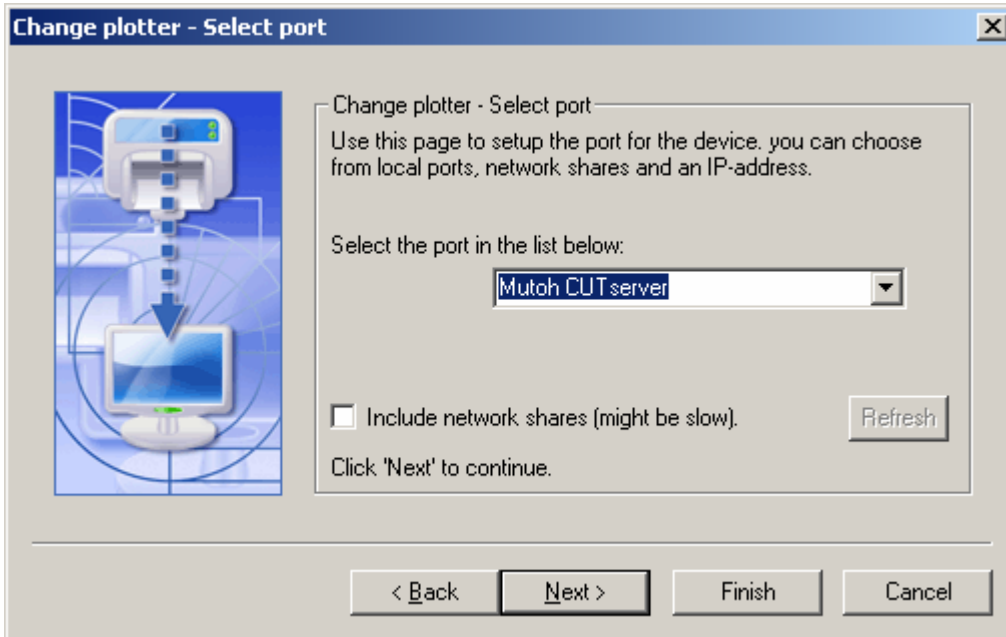


Step 8 : [A] Direct Plotting (AL3, MP1)

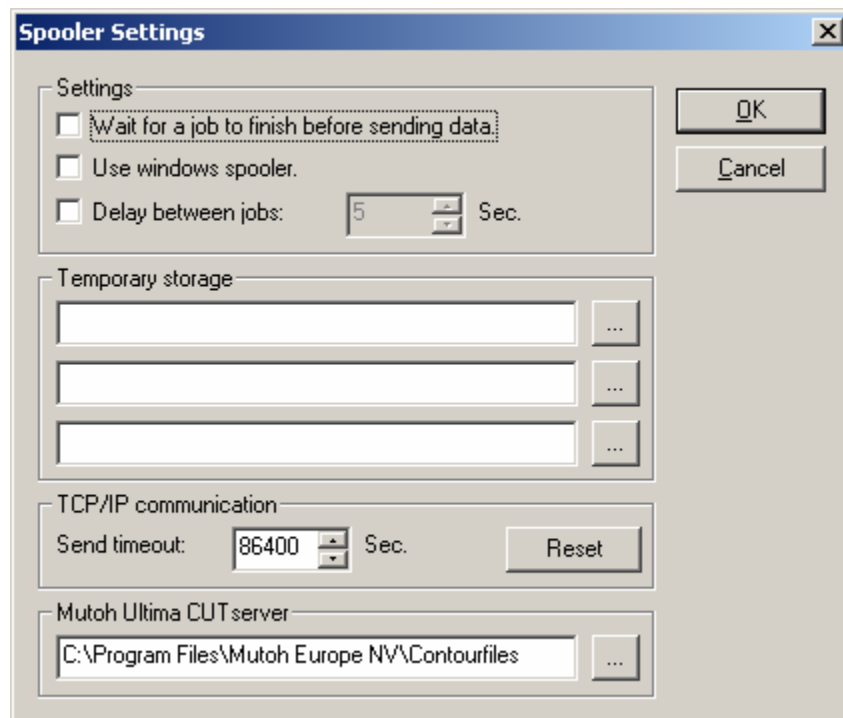


Step 9 : [B] Plot file via Mutoh CutServer (AL4, AL5)

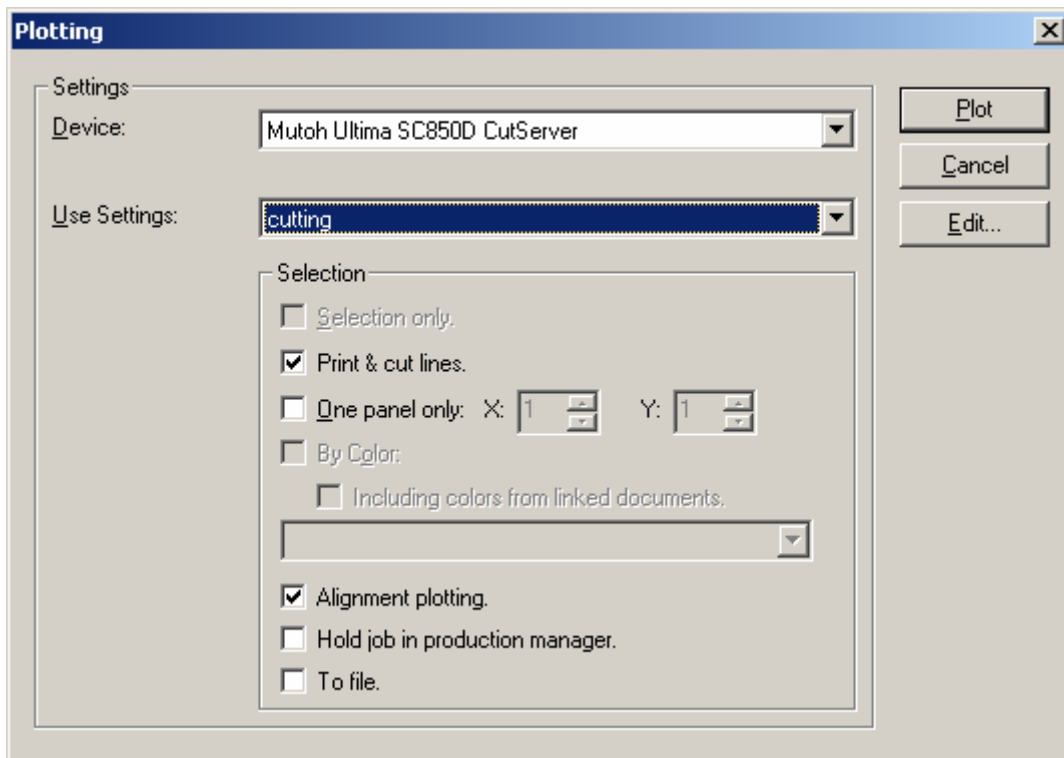
- a. Set EasySIGN link with Mutoh CutServer



- b. Specify the location of the hot folder (Spooler Production Manager)

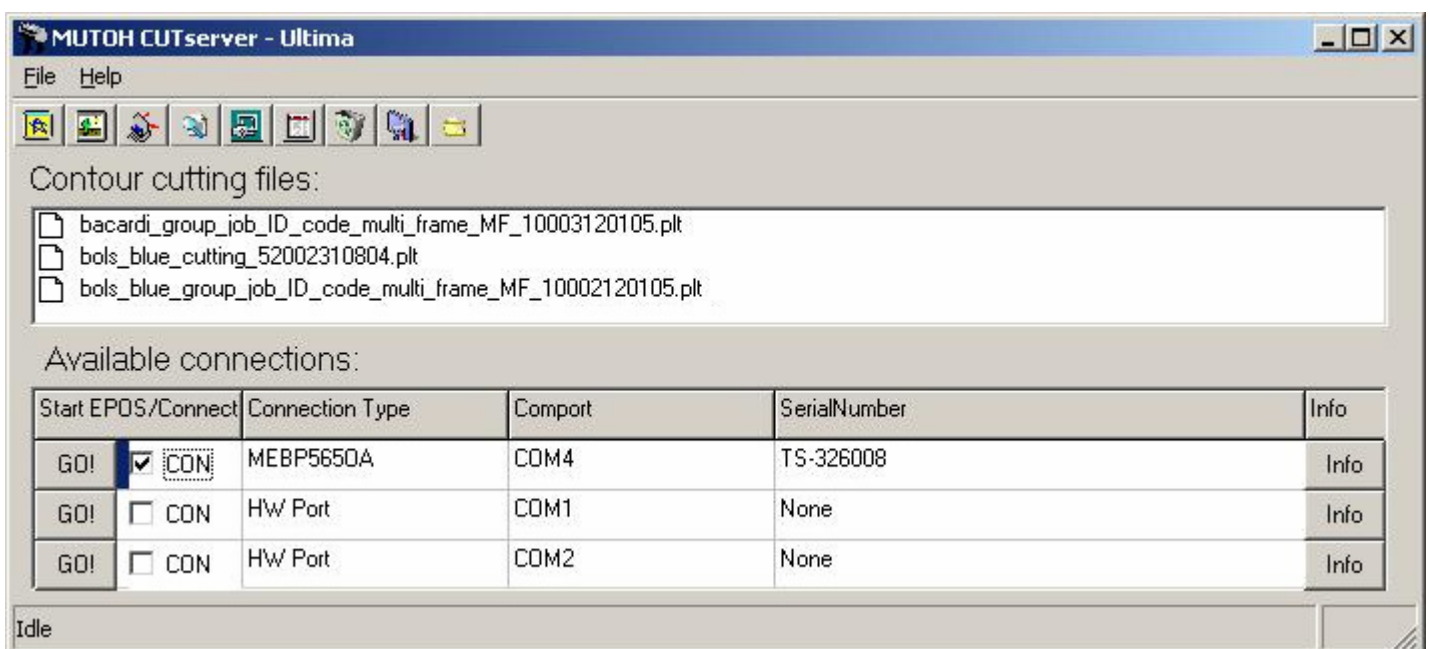


c. Plot Print & Cut lines to Mutoh CutServer



Step 8 : Send plot job via Mutoh CutServer to Ultima

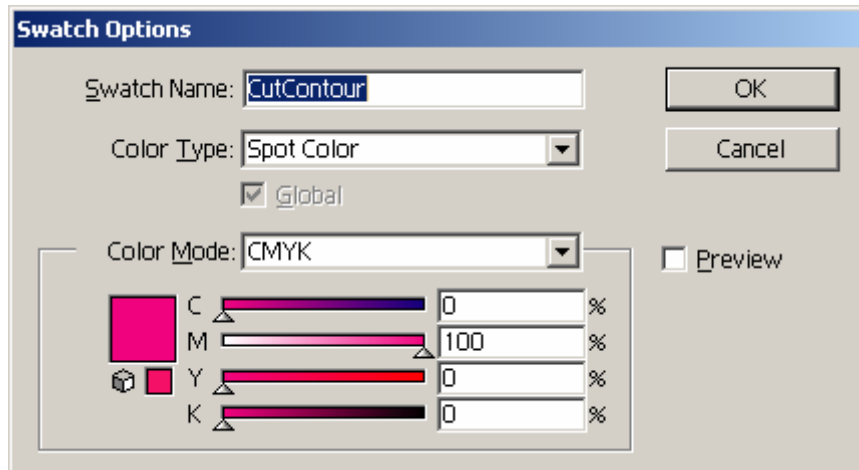
- a. Press the GO! Button OR
- b. On the Ultima Keyboard, Press **CONTOUR CUTTING** and specify the alignment method. For further details, please refer to chapter 4.



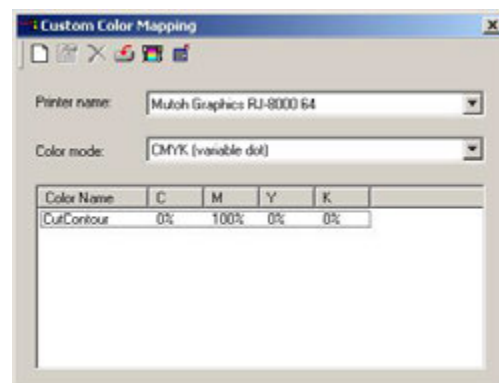
5.5. PRINT AND CUT WITH AMIABLE SCANVEC PHOTOPRINT

Please follow the steps below to perform a print and cut workflow with Scanvec Amiable.

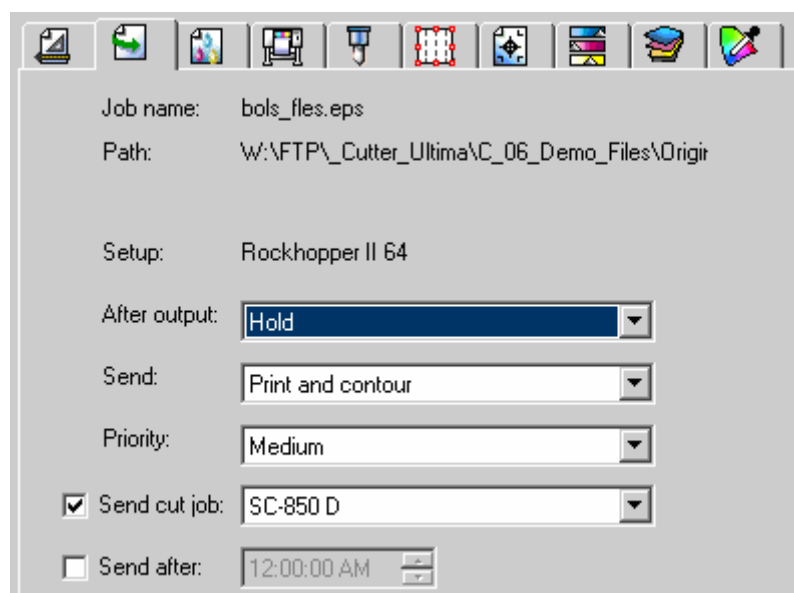
Step 1 : Create your contour design by using a spot color type and Cut Contour switch name.



Step 2 : Customize your color mapping for Contour line support in Scanvec

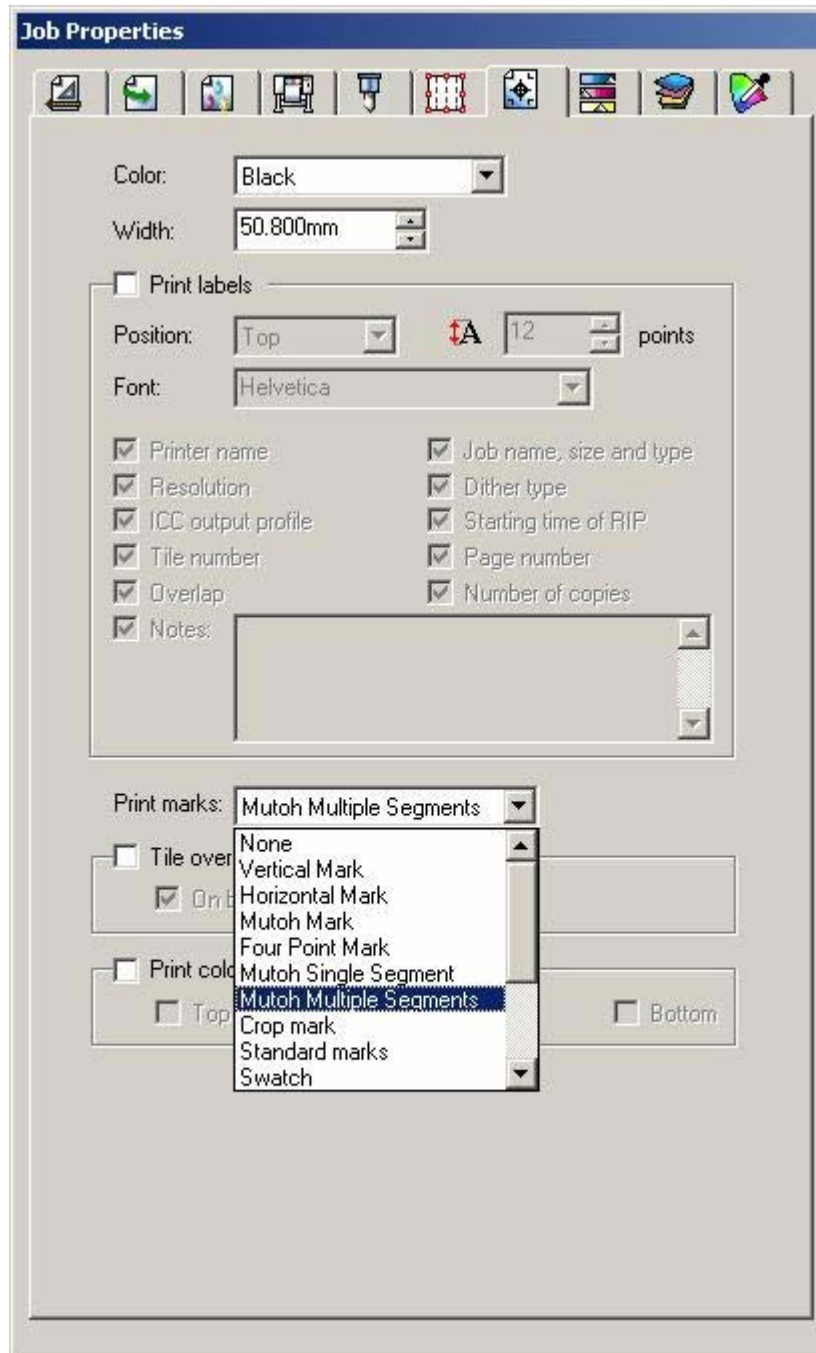


Step 3 : Add your design in Scanvec



- Step 4 :** Do you want a frame with barcode?
 YES > Print Marks: Mutoh Single Segment or Mutoh Multiple Segment
 NO > Print Marks: select Mutoh Mark

- Step 5 :** Set Print Marks (Mutoh Mark, Mutoh Single Segment or Mutoh Multiple Segment)



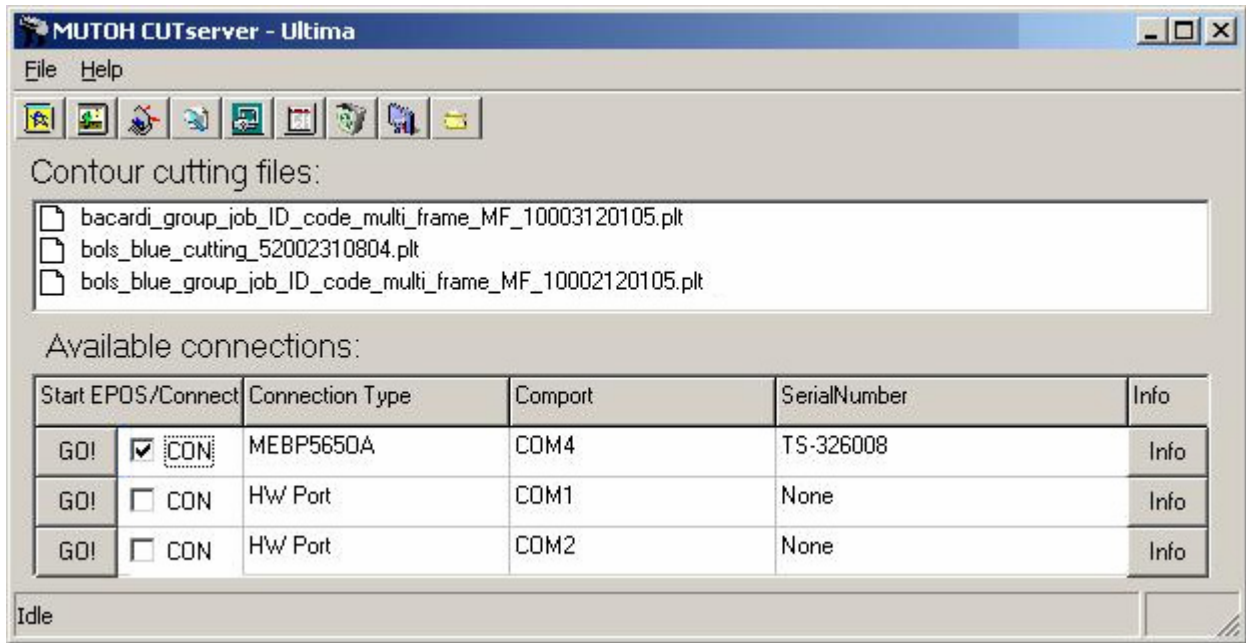
- Step 6 :** Rip and Print the contour job

- Step 7 :** Automatic generation of the contour file

Setup	Job Name	Status
Rockhopper II 64	bols_fles.eps	Done
SC-850 D	bols_fles_eps_page#1_tile#1.cut	Holding
SC-850 D	bols_fles_eps_page#1_tile#1_1.cut	Holding

Step 8 : Send plot data to Ultima / Frame with Bar Code?

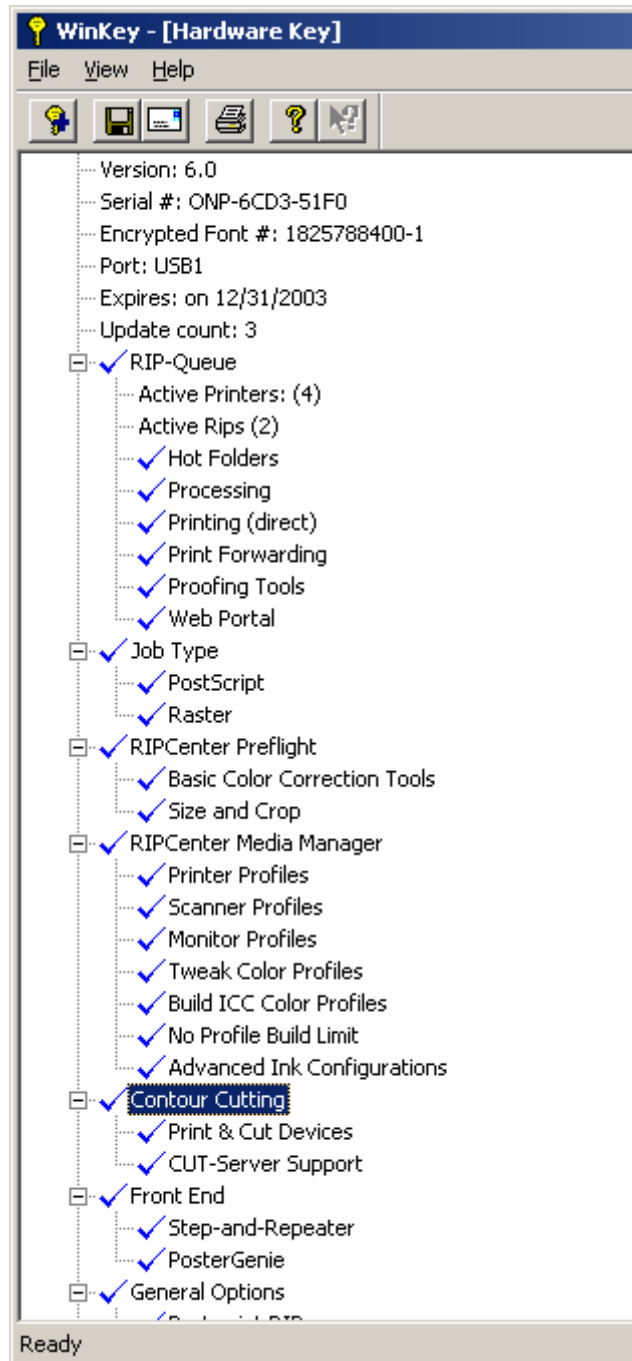
- a. Yes >> Plot file to Mutoh CutServer hot folder
- b. No >> Direct Plotting



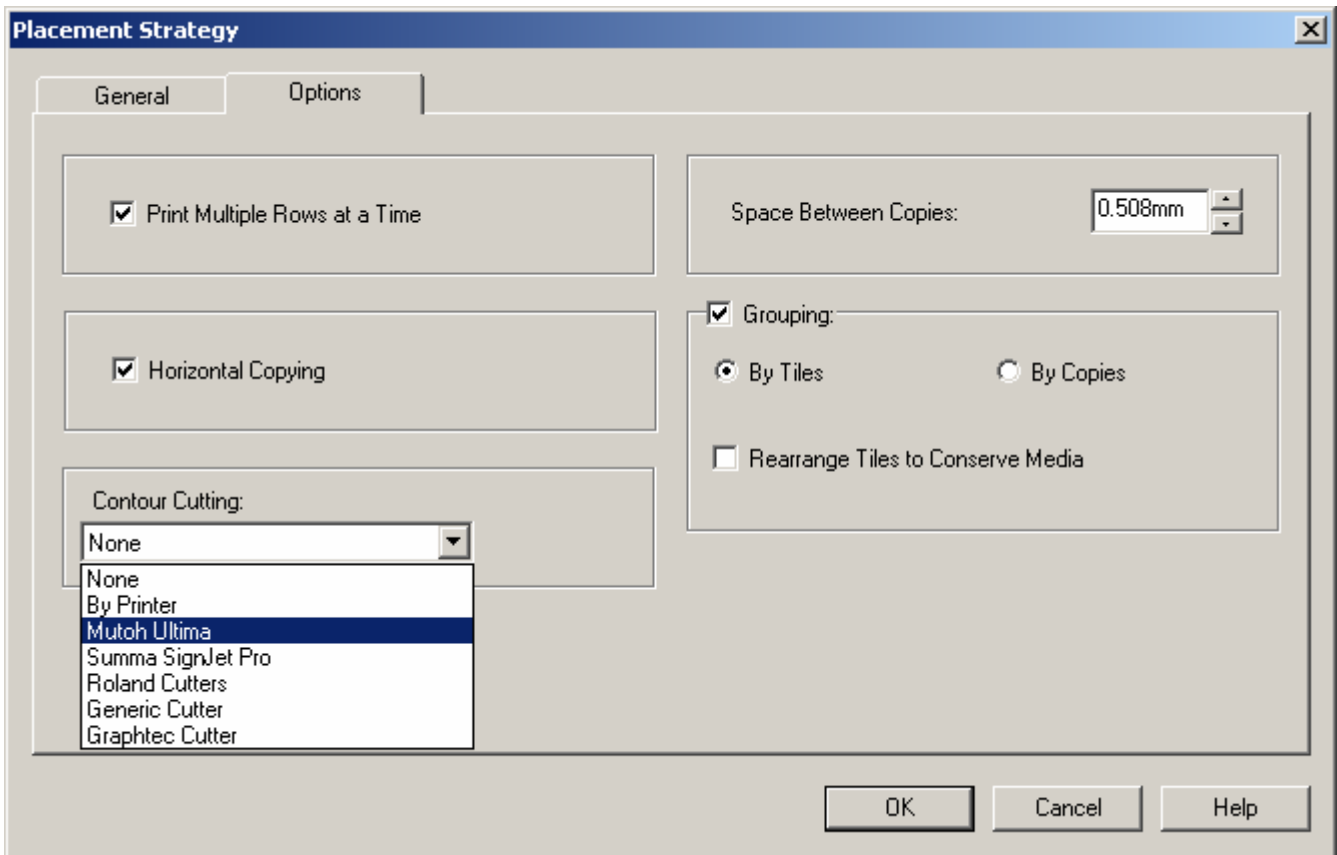
5.6. PRINT AND CUT ONYX GRAPHICS

Please follow the steps below to perform a print and cut workflow with Onyx Graphics.

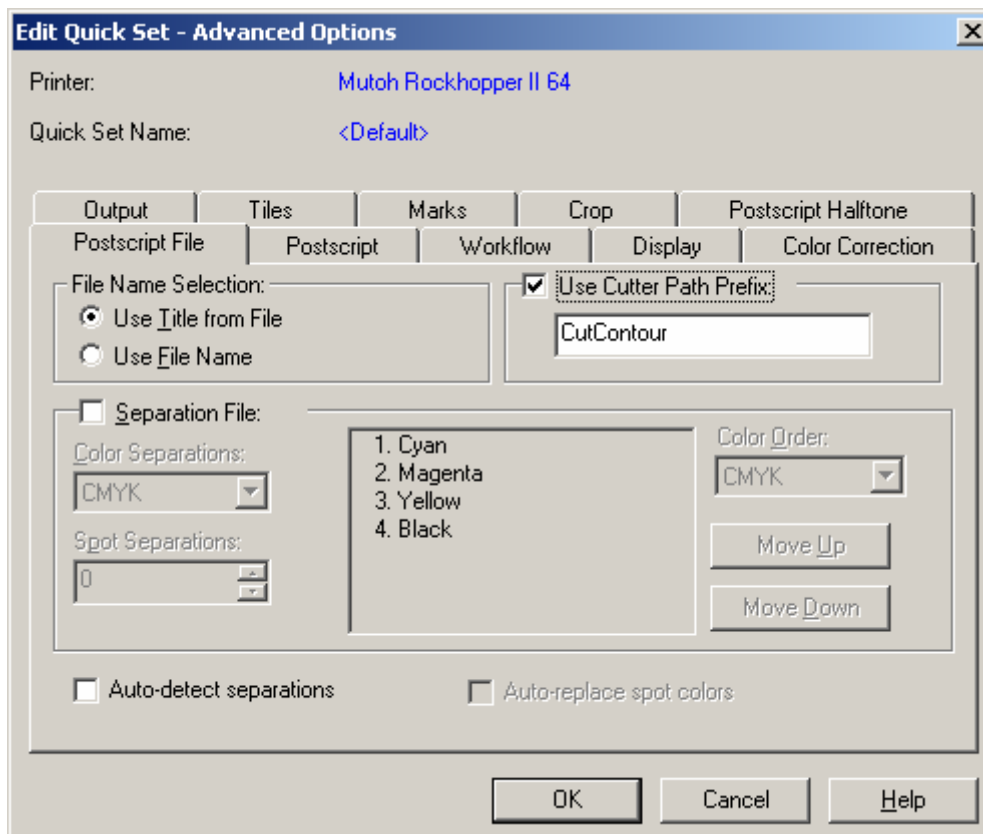
Step 1 : Make sure the Onyx “Cut server” is installed. Check your key list for Contour cutting support.



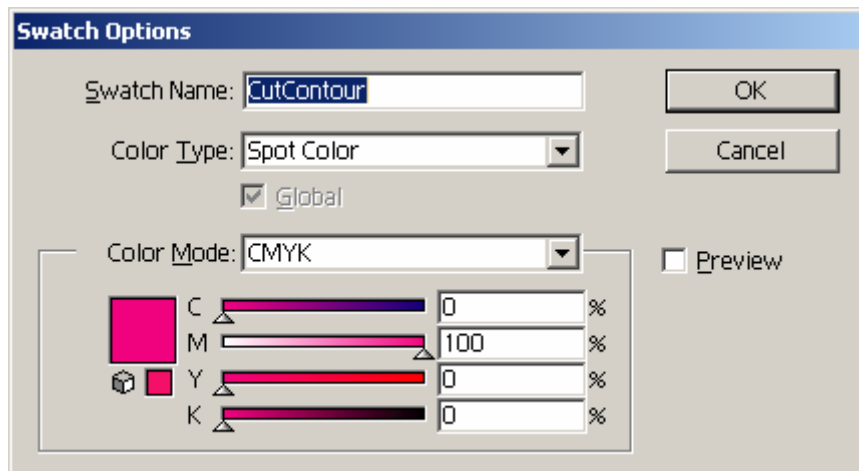
Step 2 : In the Printer Status – go to “Change” – Placement Strategy – Setup – Options – Contour Cutting – Select Mutoh Ultima → The Cutmarks, Barcode and Job number will be printed with each job.



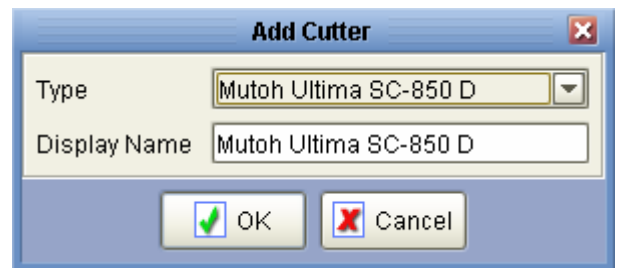
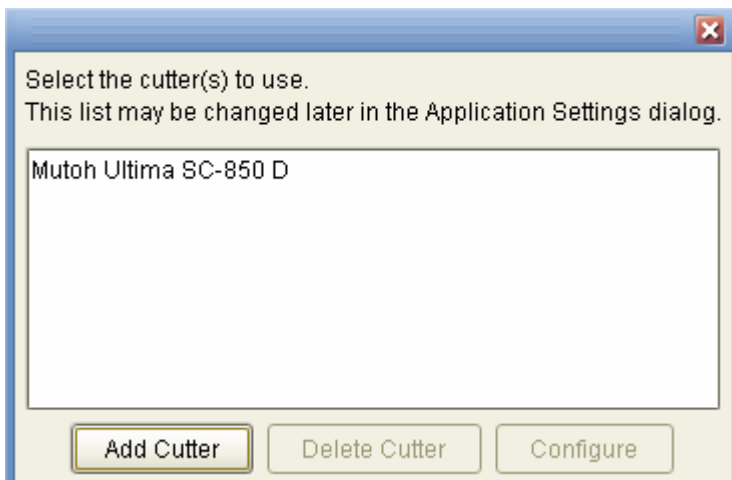
Step 3 : Quicksets – Advanced Dialog – PostScript File – Enable “Use Cutter Path Prefix”



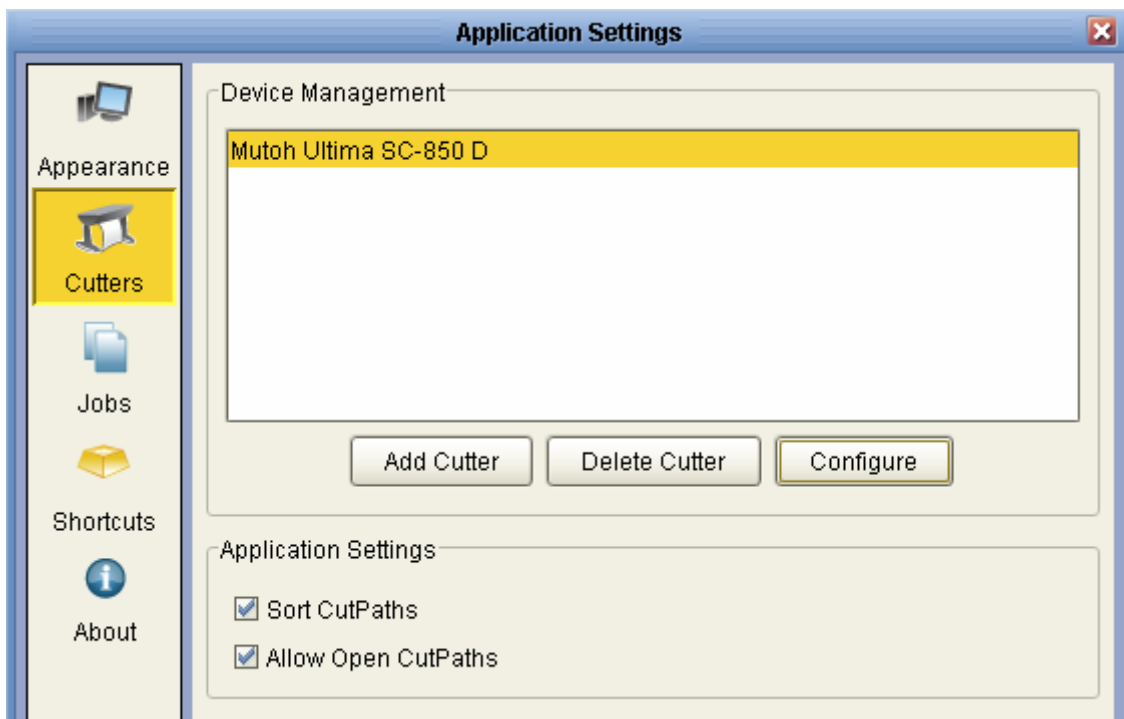
Step 4 : Use spot colors with analogue Cutter Path Prefix in your design to allocate your contour lines



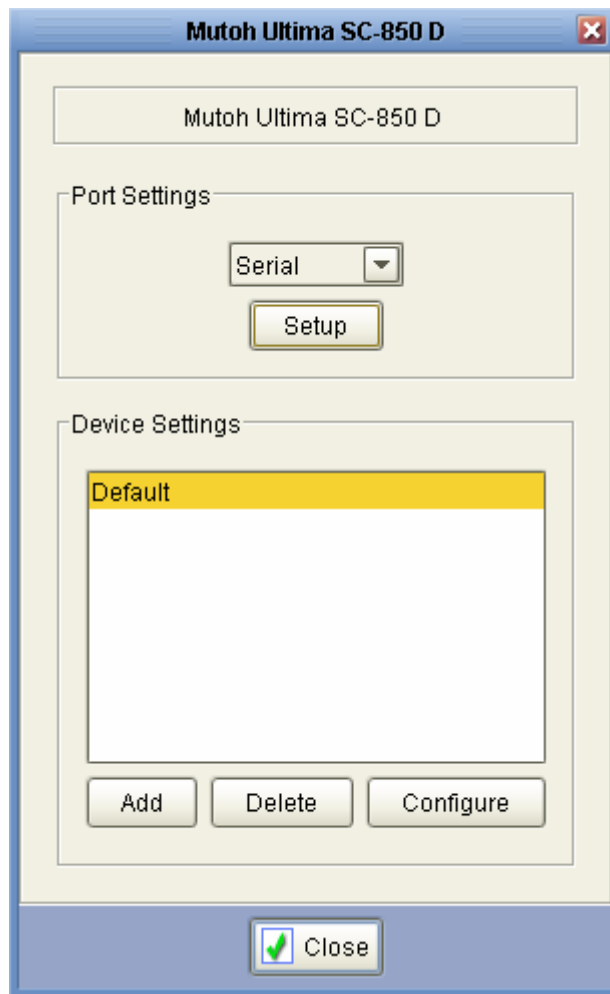
Step 5 : Select the corresponding cutter(s) to use



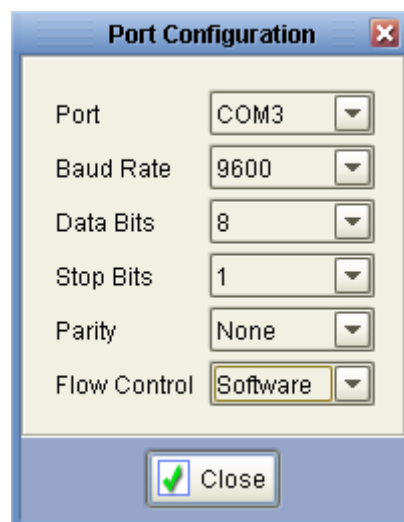
Step 6 : Configure your application settings of your cutter.



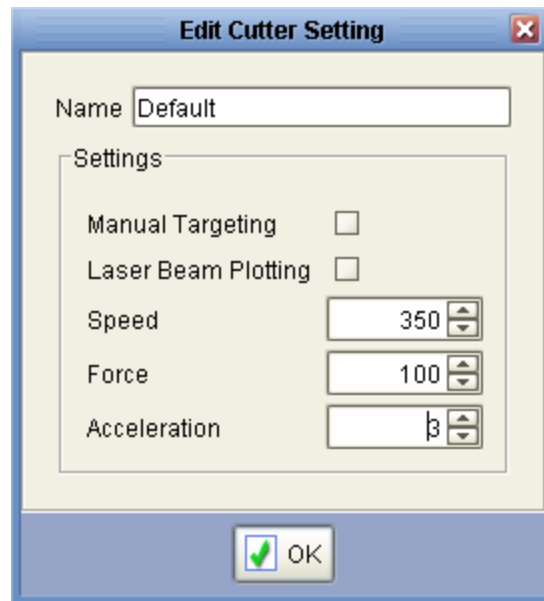
Step 7 : Configure your device



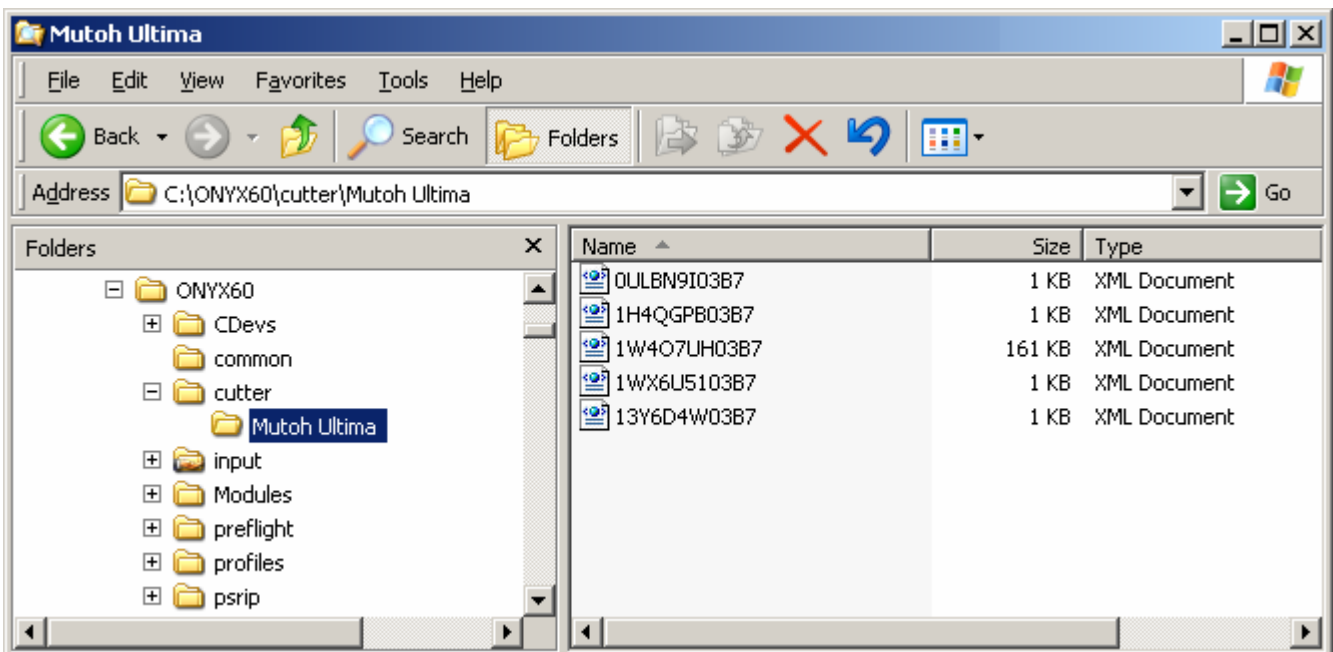
Step 8 : Set your port configurations



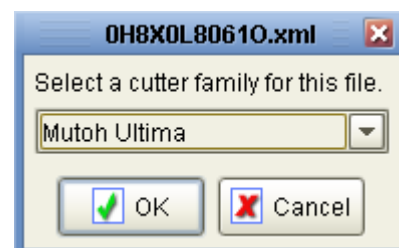
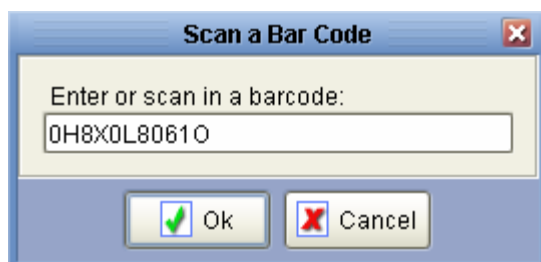
Step 9 : Edit your cutter settings



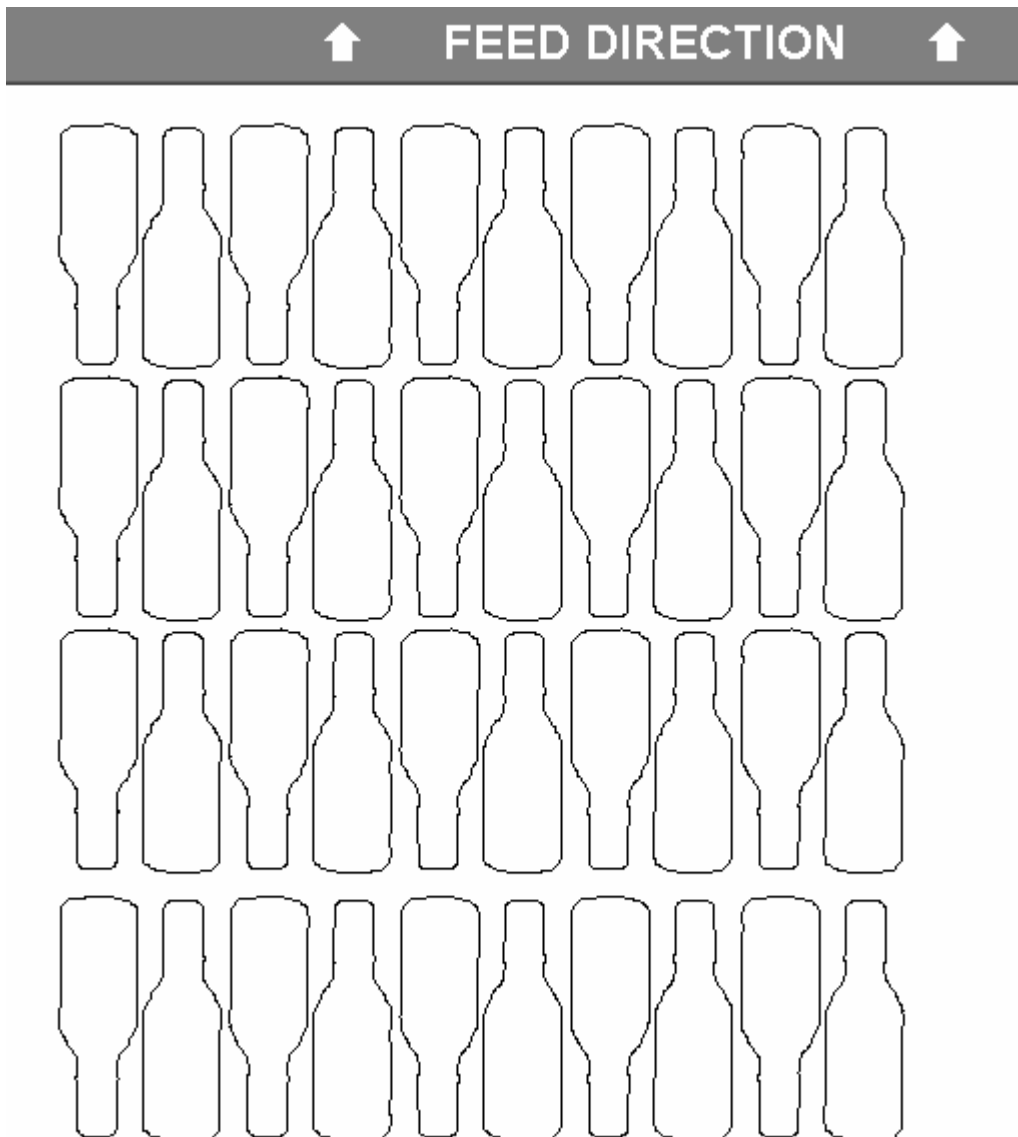
Step 10 : Once the job is printed, an appropriate cut file is placed in the corresponding cutter folder.



Step 11 : Enter a job number or scan a barcode



Step 12 : Feed direction (Back-front) and Cut NOW!

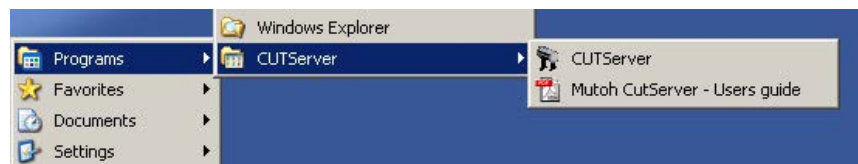


6. FAQ, HINTS, TIPS AND TRICKS

6.1. MUTOH'S CUTSERVER

Where is my CutServer?

> Search for: Start/Programs/CUTServer
 Default installation folder:
 C:\Program Files\Mutoh Europe NV\CUTServer



> When the CutServer is running, a minimized plotter icon appears in the system task bar. In case your main window disappeared, double click on the plotter icon to restore your window.



Which CutServer version do I have?

Version and build >> Menu Help – About

I would like to update my CutServer version! Where can I find the latest version?

- The CutServer installation CD will always be provided as a part of the standard in the box configuration set. It can be found on our website <http://www.mutoh.be/emc.asp?pagelD=304>
- An uninstall wizard via the control panel (Add / Remove programs) will guide you to remove your previous installation.

Where are my contour cutting files? They are not listed in the CutServer queue?

- Are you sure all plot files were gathered in the correct hot folder of the CutServer?
- Do you still have the CutServer directory linked to that particular folder?

When I press the GO! button, nothing happens?

- Verify both CutServer and Ultima communication settings, a baudrate match is required (for serial communication only).
- Were you sure no other cutting activities, lever up or stayed-on-display messages on Ultima were valid before launching the job? In all circumstances, the Ultima should state the READY mode before pressing the GO! Button.
- Are you sure no other running software tools are taking in the same com port?
- Are you sure you did not press the "GO!" button of another machine?
- Are you still sure this com port works? Can you still use it in other work environments? Did you install the USB drivers successfully?

Tip: Even in case the corresponding checkmark box was not set in advance, one single click on the "GO!" Button should immediately re-open the appropriate com port.

When I update some files in the hot folder, should I re-copy them into the CutServer?

The contour cutting files present in the queue are an absolute representation of the hot folder list, so any action on them will have an immediate and direct impact onto your folder.

Tip: It is also possible to drag and drop certain plot files from outside the CutServer (explorer, desktop ...) into the contour cutting queue list.

What type of files can the CutServer handle?

Only *.plt extensions can be viewed and used by the CutServer



- Are you sure the corresponding contour file with identical ID number is currently available in the CutServer list Queue?
- **Are you sure the MULTI POINT mode was set accordingly to the loaded sheet or printed sample roll?**

The Ultima can NOT distinguish multi frame from single frame modes by only scanning the bar code! The **user is always responsible** to set the type of alignment first before pressing the "GO!" button.

In general, two possible causes can result in such an error:

- Multi Segment frame loaded & Single frame mode selected
OR
- Single frame loaded & multi frame mode selected

**Ultima Display messages:
EPOS problem: end of roll too short**

Are you sure you did respect the bounding box margins like specified?

Margin	Recommended values
Left / Right	enough to put the pressure rollers alongside the frame
Top (front)	approximately 2 - 3 cm
Bottom (back)	Sheet (Single frame) : 10 – 11 cm Roll (succeeding frames): 5 – 6 cm

Most likely, the back side margin is too short, in which the complete frame reading can not be executed entirely. The scanning will take place for the bar code in the front, but when it needs to move the media forward to scan the back side of the bounding box, an *EPOS problem: end of roll too short* will be displayed on the Ultima panel.

SOLUTIONS:

- Add / Tape an extra white margin at the back side
- Reload your sample --> Media loading method = Sheet selection

No valid EPOS reference found

When a scanning command from CutServer to Ultima has been sent, a FIX default feeding value of approximately 25 cm in X length will ALWAYS be given to start detecting the bounding box. If no frame edge can be spot on this horizontal X – position, a *No valid EPOS reference found* will be displayed on the Ultima panel. It would have simply bypassed the frame!

SOLUTION:

- Decrease or increase the margins accordingly

The Ultima is cutting the wrong contour file?

- After laser beaming the bar code, does the jobID number on the Ultima panel displays the correct ID label?
If not, a bar code reading error occurs! Therefore, manually select the corresponding file in the CutServer and send the job via the *Send EPOS Job* mode (bypass the bar code reading)
- Are there by any accidental coincidences two plot files with identical ID numbers present in the CutServer? If yes, the first plot file from the queue list will always be used.

Can we use the contour cutting button from the Ultima panel rather than using the “GO!” button from the CutServer to start scanning the frame?

Indeed, when the CutServer is running and the media was correctly loaded, a scanning command can be given directly from panel. Once it detected the bar code, the CutServer will take action to respond with a proper file.

Make sure to select the right BAR CODE alignment system when selecting the Contour Cutting menu option:

- **BCode Single:** automatic bar code alignment
- **BCode Multi:** MF Multi Segment automatic bar code alignment

Not applicable:

- **Manual:** Manual Alignment - 4 registration marks
- **Auto No Bcod:** Automatic alignment **without** Bar Code

Selecting the alignment, and pressing the contour cutting button again, allows you to set the EPOS mode from panel (Single scan or repeat mode)!

HOW to proceed:

- Step 1 :** Press the “Contour Cutting” button to enter the alignment wizard
- Step 2 :** Select your alignment system via the “Up” and / or “Down” buttons
- Step 3 :** Press the “Contour Cutting” button again to specify your EPOS mode (Single Scan / Repeat mode)
- Step 4 :** Press “Enter” to confirm

Should I select my file before pressing the “GO!” button?

Not at all!
The Mutoh CutServer will respond to the ID request from the Ultima by selecting the corresponding file from the alignment plot list **fully automatic!** No user intervention is required any longer!

What can I do in case of unrecoverable errors or strange Ultima behaviours?

Switch OFF the Ultima and restart your PC & Mutoh CutServer.

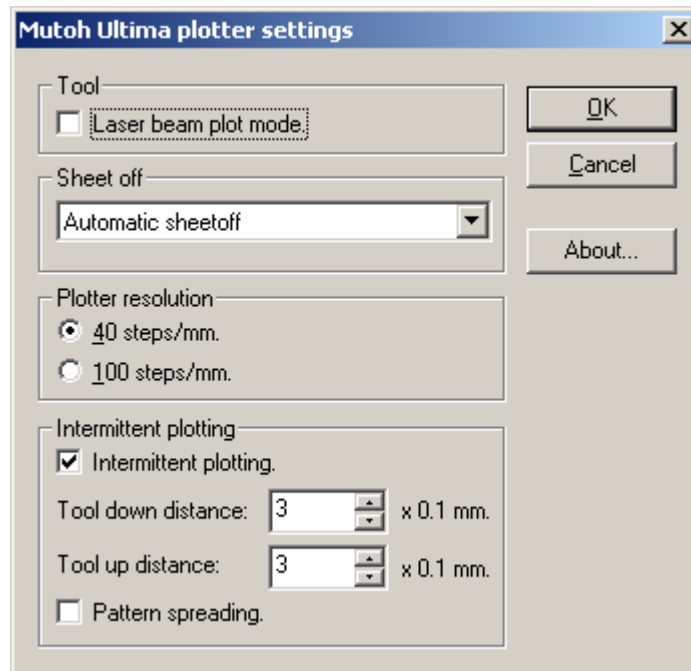
6.2. PRINT AND CUT WORKFLOW

Did you know?

Punching / Pouncing on Ultima can not be achieved directly from the tool properties; however the EasySIGN Ultima driver offers an alternative workflow to simulate the pouncing technique.

Step 1 : Install the Ultima cutter driver

Step 2 : Trace the plotter settings: <Device Specific settings>



Step 3 : Section intermittent plotting.

- o Mark the checkbox for intermittent plotting.
- o Specify your Tool down and Tool up distance to 'simulate' the punching
- o For this kind of applications (punching), pattern spreading is not a must

ZMY-10135:



Punching tool assembly including punch pin

ZME-10138:

Spare punch pin assembly

ZME-23132:



Cutting mat for Punching Applications for Ultima (Set – 3pcs)

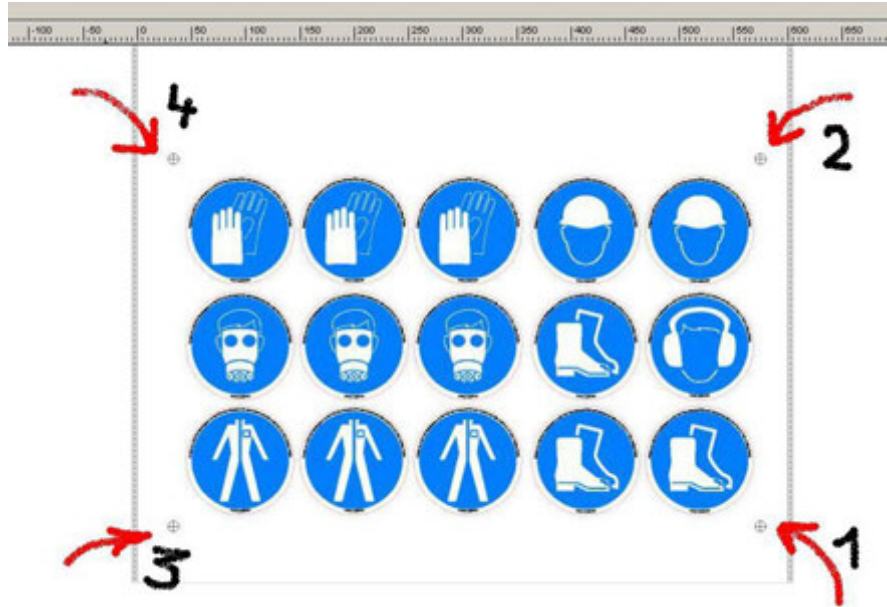
Did you know?

The <contour cutting> button and its wizard gives you the ability to finalize a contour job even without using an Ultima compatible driver software.

STEP1: Design specs

--> Add [4 Registration marks](#) around your Contour design – aligned in horizontal and vertical direction to each other

> Add your registration marks



> Contour lines

--> Make sure a contour line can be distinguished (layer, color, ...) from your design. Pay attention not to print this line while ripping the job!



contourline

> X length & Y width

--> How far are the [center point coordinates](#) of these registration marks from each other, in [X length and Y width](#)?

STEP2: Print

--> RIP and print the contour job with registration marks and **without** the contour lines.

STEP3:
Generate your plot data

How to do: In case you enabled your sheet origin in the Lower Right corner, move the entire job to that reference origin point by focusing on registration mark point 1! The registration mark should now match the sheet origin!



Enable the absolute plotting mode and generate the contour data accordingly like described above.

STEP4:
Setting up the ULTIMA

- Press the <Contour cutting> button
- Select contour cutting Method: [Manual](#) and press the <contour cutting> button again
- Fill in the corresponding [X Length value](#) of the registration marks and press the <contour cutting> button again
- Fill in the corresponding [Y Width value](#) of the registration marks and press the <contour cutting> button again
- Roll direction: [Non reverse](#) / reverse and press the <ENTER> button
- Locate the 4 registration marks by means of the [jog keys](#) and the help of the laser beam which was enabled after the enter confirmation! The Ultima will guide you by moving the head towards the next registration mark to enter.
- After the 4th registration confirmation, the Ultima will bring the head above the first reference point again. Now the unit will wait for the plot data to receive and based on your input, recalculate the plot data embedded in the firmware.

AN EXAMPLE - AN EXAMPLE - AN EXAMPLE

- 15 mandatory stickers with contour lines
 - 4 registration marks
- > X length value = 337 mm (CENTER VALUES !!)
 (X Registration mark2 – X Registration mark1)
- > Y width value = 541 mm (CENTER VALUES !!)
 (Y Registration mark3 – Y Registration mark1)

Did you know?

You can easily RIP and print your POSTNET bar code contour job with a 3rd party RIP and contour cut it with EasySIGN.

Installing the EasySIGN Mutoh Edition of NCD does not allow you to RIP and print your tasks. To make sure a bounding box frame and bar code are collected during RIPping and printing in your 3rd party RIP, an **export all (*.eps)** can be done in EasySIGN.

- STEP1:** - Create your design
- STEP2:** - Open / import your design in EasySIGN
- STEP3:** - Enable your bar code alignment system (cropmark settings)
- Export your task from EasySIGN (disable your Print and Cut lines if required)



- STEP4:** - Rip and print your task in a 3rd party RIP
- STEP5:** - Plot (hot folder CutServer)
- STEP6:** - Verify your Mutoh CutServer settings
- Press "GO!"

Did you know?

On beforehand, you can distinguish if certain types of vinyl, including non-white vinyl, can be contour cut fully automatically.

Basically, you can verify in advance if your Ultima will suffer from its EPOS reading during automatic alignment by checking the EPOS Check Sensor utility present in the menu. Enable the laser by selecting: <Test> - <EPOS system – Check sensor> and move the sheet manually so the laser would detect white and black areas!

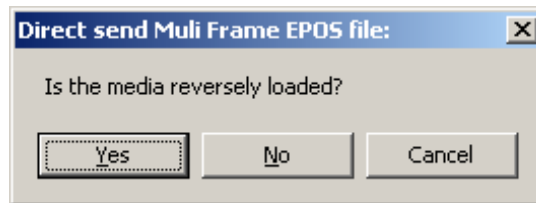
If the Ultima deliberates both areas as the same color (f.i. Black), automatic frame detection will never be possible! There is no possibility to fine tune the laser led in this way that it would detect a certain color as white or black! It is simply a limitation of the color range of the laser (normal circumstances White and Black) ...

The only alternative we can offer you is to handle for this type of transparent media the manual alignment method. Most of our SW manufactures did implement this topic into their drivers for this kind of applications! (please refer to chapter 5.3)

Did you know?

To bypass the bar code postnet reading (no successful bar code scanning possible), a workaround was made!

In case **reading errors** occur during the Ultima's bar code detection sequence, a **manual workaround** for damaged bar code strings or faulty readings is available. Search for the correct alignment file in Mutoh's CutServer Queue, and press the *Send Epos Job* button. To directly send the EPOS file without reading the bar code, the media load direction needs to be provided (0° or 180° degrees rotated?).



As soon as a confirmation is given, the frame scanning command will be adapted to bypass the bar code reading, and immediately the registration marks of the bounding box and the vector data will be broadcasted.

Did you know?

A test square (offset patch) can be plotted to verify your current Force setting.

When trying to attempt to find the most suitable force setting for your specific vinyl type, a few force tryouts will probably take place. The Force button will not only allow you to set the most proper value, but gives you also the opportunity to verify your setting by means of plotting a simple offset patch.

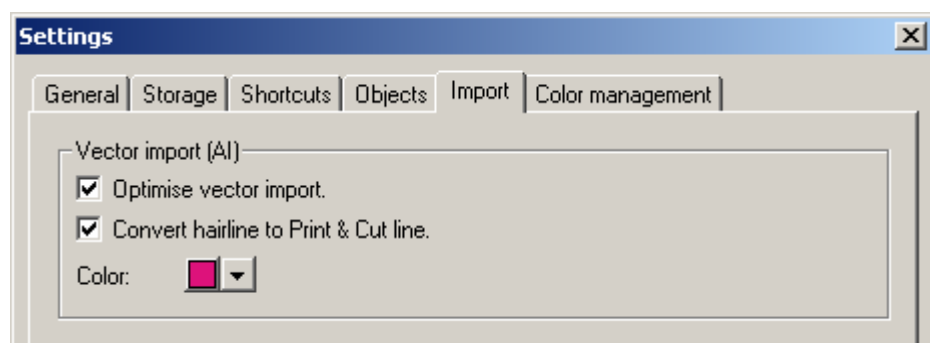
- STEP1:** Press the Force button
STEP2: Set your Force value (Up / down keys)
STEP3: To verify your force value, press the Force button once more to plot one single offset square.

Did you know?

Only Illustrator versions 7 and 8 are compatible to import your creative designs into EasySIGN.

Lower your illustrator version (save as V7 or V8) in case nothing was imported!

- TIP1:** To automatically convert your corresponding hairline colors into print and cut lines, specify your EasySIGN import settings accordingly.



- TIP2:** Curves and lines can always be converted and specified manually towards print and cut lines. Ungroup first if required, right click and select: convert to – option Print and cut line.

Did you know?

EasySIGN developed a software tool called <Compatibility> which allows the user to immediately export your design from certain *compatible* graphical bundles into the EasySIGN software.

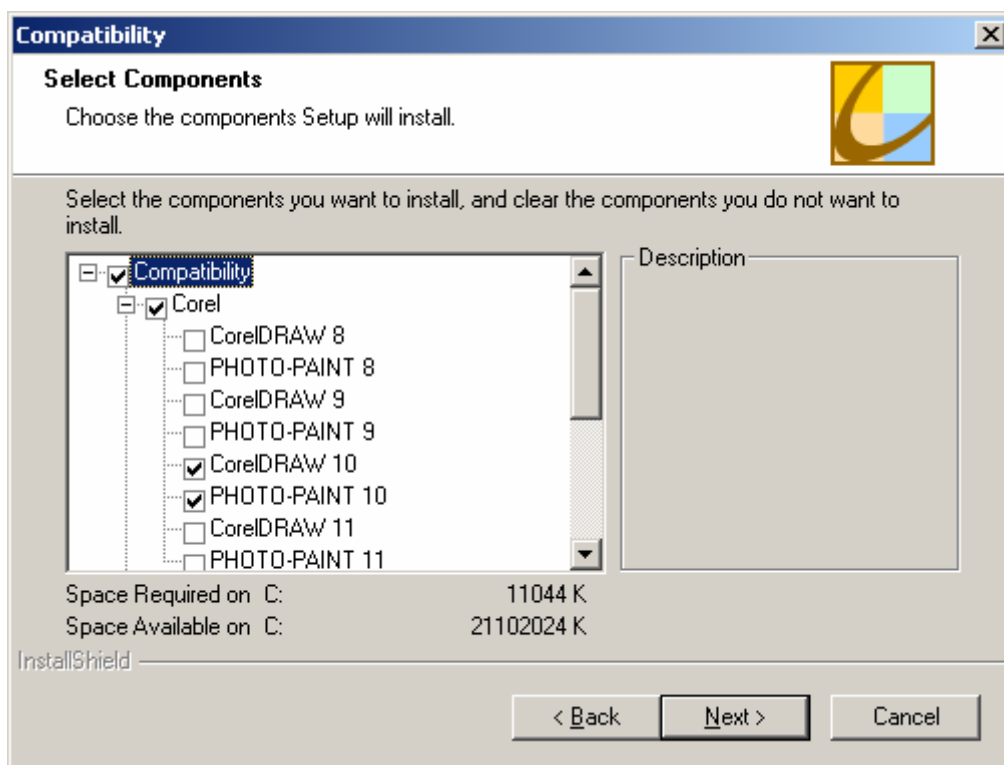
Rather than saving and importing your job, an easy **export to EasySIGN** workflow can be handled by means of the Compatibility tool.

INSTALLATION:

- CorelDRAW 8
- CorelDRAW 9
- CorelDRAW 10
- Illustrator 9
- Illustrator 10
- PHOTO-PAINT 10
- Photoshop 6

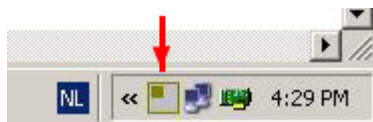
- Select *Start - Program files* and search for your EasySIGN folder
- Select *Tools* and install the "Compatibility" setup

The "compatibility" wizard will scan your hard disk for all types of installed graphical bundles and suggest installing the *compatible* driver. As a result, new icons will be found trough *Start - Program files – Compatibility*

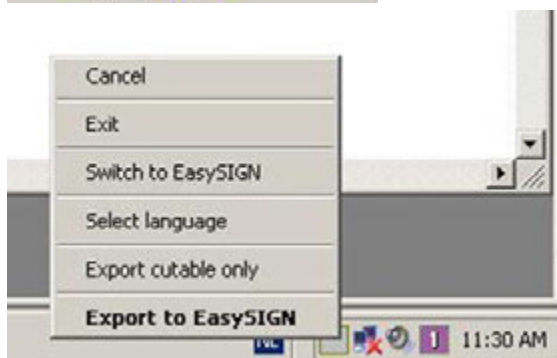


- STEP1:**
- STEP2:**
- STEP3:**
- STEP4:**

- Run EasySIGN
- Open / Create your design (example Illustrator 10)
- Run the corresponding compatibility tool for Illustrator



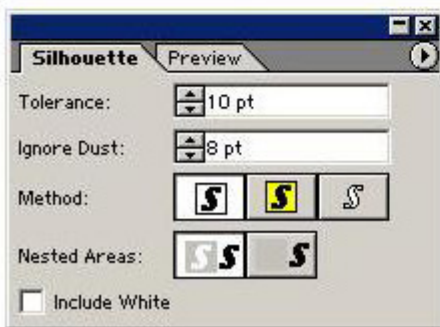
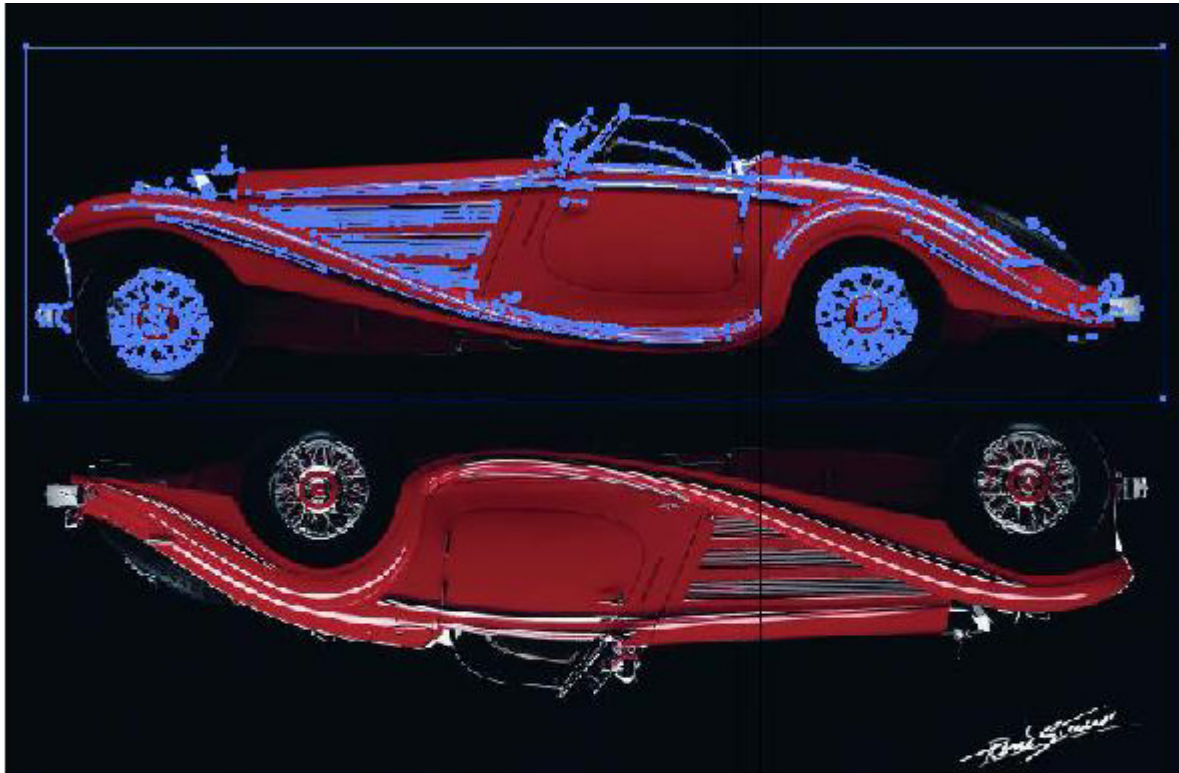
Select your design and press the Illustrator icon to export your task immediately into EasySIGN.



Did you know?

A handy Plug-in for Adobe exists to vectorize Raster Images

- > Adobe Plug-in : Silhouette
- > Copy SilhouettePlugIn.aip in folder C:\Program Files\Adobe\Illustrator 10\Plug-ins\Tools



- STEP1:** Open a bitmap
- STEP2:** Select the Silhouette tool + set your properties
- STEP3:** Drag your Silhouette tool to vectorize your image

Did you know?

Identical bounding box frames from roll without bar code can be contour cut continuously via the copy function.

Imagine you need to contour cut one roll with numerous but identical print and cut frames. Load your roll and enable the sheet off option to perform a page cut in between frames.

- STEP1:** Launch job number 1
- STEP2:** Re-plot via panel by specifying the number of copies
- CONDITION:** Data will be buffered for copy plotting as long as no lever up (or power down) occurred.

Did you know?

To avoid TOP - curling of your vinyl during plotting, reload your vinyl above the sucking area and change the media loading method into take up.

Take-up media detection (Automatic method)

Instead of using the roll or sheet option, a third media detection system can be entered, the Take-Up possibility. Press the media button on the panel and change while the lever is up from sheet or roll to TAKE-UP.

This TAKE-UP option will not try to detect the front of the media, but detects both right and left edges + unrolls the pre-feed length. After the end cyclus of the TAKE-UP media detection, it will bring the origin back to that spot from where the head was located versus the original media loading position.

Did you know?

By enabling the EPOS fine tune mode, a variation in your sensor calibration can be selected to adjust the nominal setup.

To obtain optimum contour precision, a variable frame edge reading technique can help you out to accurately reposition your contour data. The Epos fine tune mode can only be activated for one job at the time!

STEP1:

Enable the EPOS fine tune mode by pressing simultaneously the keyboard panel keys: <Test> + <contour Cutting>

STEP2:

Send your contour job

As a result, in both horizontal and vertical directions, a representation of the current edge reading by means of a variable line pattern will be plotted.



-0.50 -0.40 -0.30 -0.20 -0.10 0.00 +0.10 +0.20 +0.30 +0.40 +0.50

Did you know?

In case of problems during uploading your firmware via serial communication, a special loading sequence can arrange a successful firmware installation.

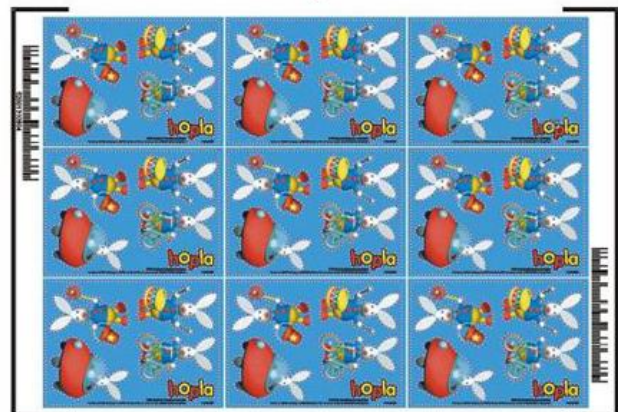
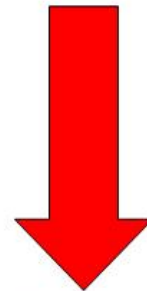
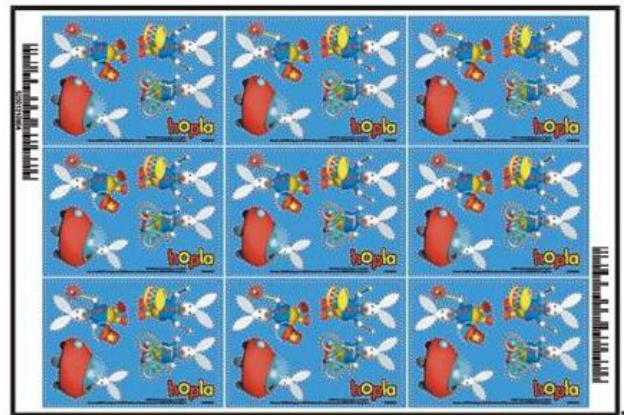
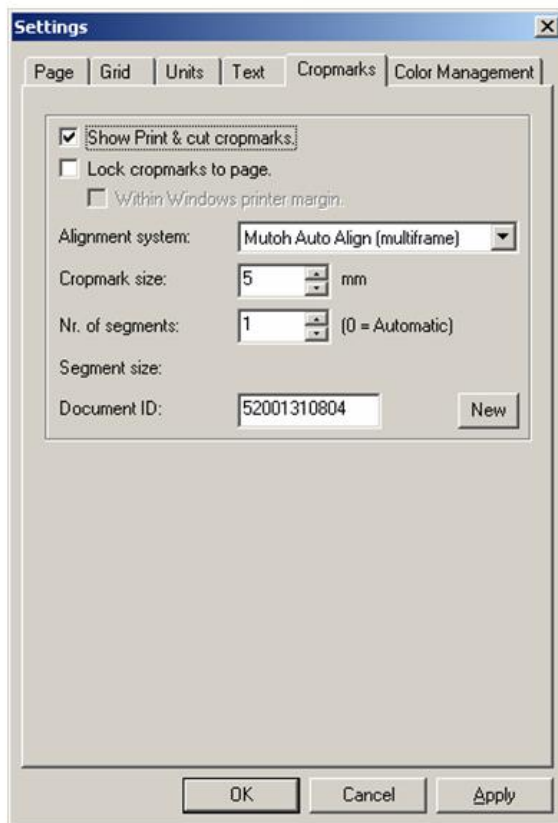
Certain setup conditions of PC and Ultima will NOT allow a firmware upload via the traditional serial communication transfer method. In case of problems, please use following alternative workflow: see TIB044 Firmware Inst Ultima – section 5 / When you shut down the Ultima outside the critical section?

Did you know?

Mutoh's new alignment system for multi segment contour cutting can also be used for single frames.

The EasySIGN driver has been adapted lately to support the new multi segment alignment method. A possibility to enter the number of segments allows the users as well to simulate the previous alignment system, Mutoh Auto Align (bar code).

- > SEGMENT specifications --> Number of segments :
- > 0 = automatic segment dividing (default segment size = ± 500 mm)
- > 1 ... # = Specify the number of segments to split up your bounding box.



PRO1: Rather than having a complete rectangle around your job, one single segment will only enable a start and stop frame.

Did you know?

Many speed settings can be set inside the menu structure of the Ultima, but from time to time people do not understand when it will be used, or how it will be interpreted or what the impact will be?! In what relation to these settings will all incoming speed and acceleration settings be overruled? Will it adapt the panel settings? Will the Ultima use these settings when entering the alignment wizard?

> Basically, following speed settings can be established on panel:

- Tool Up speed
- Laser beam speed
- Cutting speed
- Quality (Draft = 2,5 G - Normal = 1,75G – High = 1G)
- VS / ZF / AS: Ignore or Accept

> In most software bundles, following settings can be made:

- Cutting speed = VS
- Acceleration = AS
- Force = ZF

Fact 1 The scanning speed (laser ON, spot edge, laser OFF sequence) of the frame / bounding box reading equals a FIX value of 100mm/s and 2G.

Fact 2 Also the bar code ID will be examined at a FIX reading value of 100mm/s and 2G.

Fact 3 The speed in which media has been forwarded to detect the backside of the rectangle uniforms the TOOL UP SPEED.

Important note: Different impressions of speed can be taken into account during one single frame / bounding box reading.

Fact 4 ONLY in case of enabling the ACCEPT parameter for the Ultima menu option VS / ZF / AS, similar software commands will be interpreted or refused according to your plotter menu setup!

Fact 5 The laser speed setting inside the Ultima menu structure will NOT be used to scan the bounding box of your job (default scanning speed of 100mm/s, 2G).

The laser speed value will only have impact while laser plotting your contour data (Enable the beam plotting mode in your software).

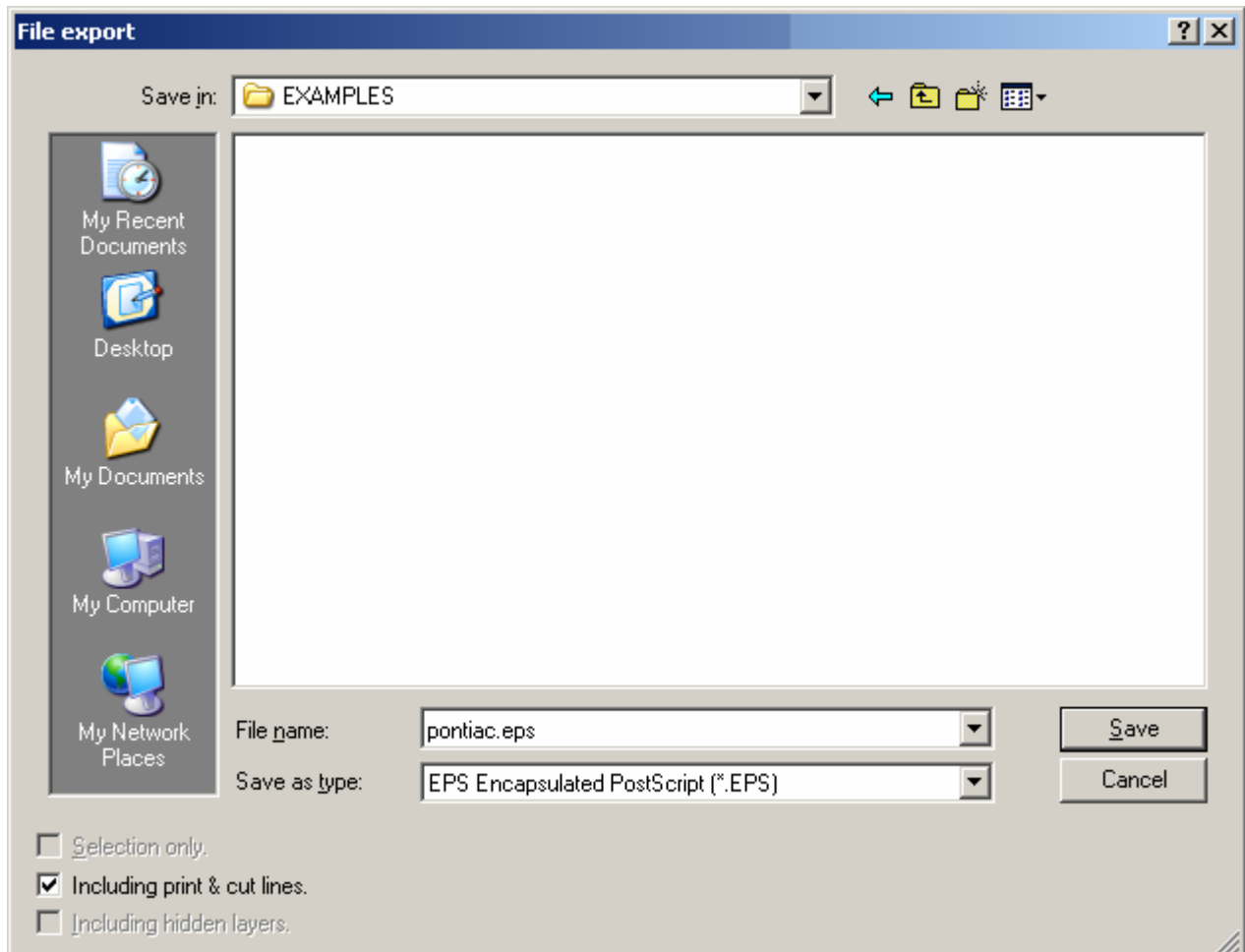
Fact 6 Included job properties like speed and force will still be displayed on the Ultima panel during and AFTER finishing the task. Each succeeding job will re-initialise all values accordingly to the next plot properties or original user settings.

Did you know?

You can easily export your contour job in EasySign and decide not to have the print and cut lines included.

In some situations (printing with 3rd party RIP) it can be very handy not to have the print and cut lines included while exporting your job.

Specify your needs at the bottom left of the export window.



Did you know?

You can easily simulate your CutServer 'GO!' button by selecting the contour cutting button from panel.

Only specify the type of alignment from the contour cutting list and press <enter> to start scanning your bounding box or bar code ID.

Examples:

- Bcode Single (Bar code bounding box)
- Manual (4 registration marks)
- Auto No Bcod (Bounding box without bar code)
- Bcode Multi (Bar code multi segment bounding box)

Make sure to double check (press the contour cutting button twice) the second tab in this contour cutting wizard. Depending on your original selection, set your scan mode (single, repeat) or frame properties (X length, Y width, and roll direction).

